Harry Wolfson

July, 1912

# ARISTOTLE

## AND THE EARLIER PERIPATETICS

VOL. I.

# ARISTOTLE

AND

# THE EARLIER PERIPATETICS

*BEING A TRANSLATION FROM*

*ZELLER'S 'PHILOSOPHY OF THE GREEKS'*

BY

B. F. C. COSTELLOE, M.A.

AND

J. H. MUIRHEAD, M.A.

*IN TWO VOLUMES—VOL. I.*

LONGMANS, GREEN, AND CO.

39 PATERNOSTER ROW, LONDON

NEW YORK AND BOMBAY

1897

TO

THE MASTER OF BALLIOL

# TRANSLATORS' NOTE.

THE following translation embraces Part II. Div. II. of the third edition of Dr. Eduard Zeller's work on 'The Philosophy of the Greeks in its Historical Development.' It is made with Dr. Zeller's sanction, and completes the series of volumes issued from time to time by Messrs. Longmans as translations of the various sections of that exhaustive work. Mr. Costelloe is chiefly responsible for the translation of text and notes up to the middle of Chapter VII., and for Chapter XIX. to the end; Mr. Muirhead for the middle portion. In most instances, however, both translators have revised the sheets. In calling attention to the table of *Corrigenda*, which is longer than might reasonably be expected in a work of this kind, the editors desire to explain that, owing to an accident for which the translator was not responsible, the sheets of that portion of the text in which the greater part of them occur

were passed through the press before he had seen them in proof. In dealing with some parts of Zeller's notes a certain liberty has been taken with the German text with a view to condensing the material where this could be done without impairing its value. The treatise is believed to be the only work accessible to English readers which is a complete and accurate exposition of the Aristotelian doctrine. The student will find ample guidance as to Dr. Zeller's plan in the Table of Contents, which is in fact an index of subject matters; and the arrangement adopted by Dr. Zeller is so logical and clear that it has not been considered necessary to burden the translation with an exhaustive verbal index.

# CONTENTS

OF

# THE FIRST VOLUME

## CHAPTER I

### THE LIFE OF ARISTOTLE



## CHAPTER II

### ARISTOTLE'S WRITINGS

A. *Consideration of the particular Works seriatim*



B. *General Questions touching the Aristotelian Writings.*



## CHAPTER III

### HISTORY AND ORDER OF THE WORKS OF ARISTOTLE

## CHAPTER IV

### STANDPOINT, METHOD, AND DIVISIONS OF THE PHILOSOPHY OF ARISTOTLE



## CHAPTER V

### LOGIC



## CHAPTER VI

### INTRODUCTORY INQUIRIES TOUCHING ARISTOTLE'S METAPHYSICS

## CHAPTER VII

### METAPHYSICS—*continued*

### *The Main Inquiry of Metaphysics*



## CHAPTER VIII

### PHYSICS

### A. *The Idea of Nature and the most General Conditions of Natural Existence*



## CHAPTER IX

### PHYSICS—*continued*

### B. *The Universe and the Elements*

## *Addenda and Corrigenda.*

Page 74, n. 2. Zeller adds in a later note that Diog. No. 78 gives the *Rhetoric* only 2 books, but this is not decisive.

„ 129, l. 22. Zeller adds in a later note, that many of these may be in great part explained by the supposition that Aristotle did not always *write*, but *dictated* his books.

„ 178, n. 2, *for* Braniss *read* Brandis

„ 188, n. 1, col. 1, l. 12, *for* representation *read* opinion

„ 203, n. 2, l. 4, *insert* 199, n. 2

„ 210, n. 2, col. 1, l. 18, *delete* of

„ 224, n. col. 1, ll. 11, 12, *for* a *and* an *read* the same

„ 232, 233, *for* individual [judgments] *read* singular

„ 235, n. col. 2, l. 30, *for* apodeictic *read* assertorial

„ 249, n. 3, col. 2, l. 5, *for* there *read* these

„ 257, n. 1, add a further reference to *De Cœlo*, i. 10 *init.*

„ 288, n. 1, col. 2, ll. 18, 21, *for* equality *read* identity

„ 302, n. 3, col. 2, l. 3, *for* corresponds with *read* assimilates to itself

„ 335, n. 1, l. 4, *for* general *read* universal

„ 346, n. col. 2, l. 15 from bottom, *after* possibility *insert comma*

„ 361, n. col. 1, l. 16, *omit semicolon*

„ 364, l. 8. Zeller in a later note refers to the criticism of Torstrik (*Hermes*, ix. 1875, p. 425), and suggests that the word 'disturbance' might be replaced by 'modification.'

„ 390, n. 3, col. 1, l. 17, *for* Fr. 13 *read* Fr. 12

„ 395, n. col. 1, l. 9, *after* (the ἀΐδιον) *add* that it should be capable of ceasing to be

„ 400, n. 1, col. 2, l. 11, *omit* not

„ „ „ l. 33, *after* word *read* is

„ 404, l. 23, *for* object of thought *read* intelligible

„ 405, n. 3, col. 1, l. 12, *for* do *read* are

„ 407, n. 2, col. 2, l. 18, *for* motion *read* moved

„ 412, n. col 1, l. 5, *after* κινοῦν *add* absolutely

„ 415, l. 16, *for* forces *read* Form

„ 417, l. 9, *for* bodies and masses . . . related to them *read* not only bodies and magnitudes but everything which possesses them or is related to them

„ 427, n. 3, col. 2, l. 8, *for* masses *read* magnitudes

„ 428, l. 28, *for* after *read* behind

„ 441, n. 2, col. 1, l. 8, *for* forcible *read* forced

„ 454, l. 11, *for* extension *read* extrusion

„ 459, n. 5, col. 1, l. 17, *for* But *read* Again

„ 479, n. 1, col. 1, l. 1, *after* ought *add* in the converse case

„ „ „ l. 4, *after* does *add* not

„ 481, n. 1, col. 2, l. 24, *for* oppositions *read* opposites.

„ 497, n. 1, col. 2, l. 3, *for* one who stands . . . in front of him *read* in front of the propeller who stands in the line of the axis

„ 504, l. 1, *for* One *read* The

„ 510, l. 2, *for* has raised *read* surrounds

# ARISTOTLE

AND THE

# EARLIER PERIPATETICS

## CHAPTER I

### THE LIFE OF ARISTOTLE

THE lives and circumstances of the three great philosophers of Athens show a certain analogy to the character and scope of their work. As the Attic philosophy began by searching the inner nature of man and went on from this beginning to extend itself over the whole field of existence, so we find that the life of its great masters was at first confined in narrow limits, and gained, as time went on, a wider range. Socrates is not only a pure Athenian citizen, but a citizen who feels no desire to pass beyond the borders of his city. Plato is also an Athenian, but the love of knowledge takes him to foreign lands and he is connected by many personal interests with other cities. Aristotle owes to Athens his scientific training and his sphere of work; but he belongs by birth and origin to another part of Greece, he spends his youth and a considerable part of his manhood out of Athens, chiefly in the rising Macedonian kingdom; and even when he is in Athens, it is as a stranger, not bound up with the political life of the

city, and not hindered by any personal ties from giving to his philosophy that purely theoretic and impartial character which became its distinctive praise.[1]

The birth of Aristotle falls, according to the most probable reckoning, in the first year of the 99th Olympiad,[2]

[1] The old accounts of Aristotle's life now extant are (1) DIOGENES, v. 1–35 (far the most copious); (2) DIONYSIUS of Halicarnassus, *Epist. ad Ammæum*, i. 5, p. 727 sq.; (3) Ἀριστ. βίος καὶ συγγράμματα αὐτοῦ, by the *Anonymus Menagii*; (4) another sketch of his life, known to us in three forms: (*a*) the Βίος first printed in the Aldine ed. of Arist. *Opp.* 1496–98 (which is there ascribed to Philoponus, elsewhere to Ammonius, but belongs to neither), here cited as the *Pseudo-Ammonius* (or *Amm.*); (*b*) the Life published from the Codex Marcianus by Robbe in 1861, cited as *Vita Marciana* (or *V. Marc.*); (*c*) the Life cited as the *Latin Ammonius*, preserved in an ancient translation, which approaches more closely to the *Vita Marciana* than to the *Pseudo-Ammonius* itself; (5) Ἡσυχίου Μιλησίου περὶ τοῦ Ἀριστοτέλους; (6) SUIDAS, *sub voce* Ἀριστοτέλης. All of these, except (4*b*), are to be found in BUHLE, *Arist. Opp.* i. 1–79. Westermann's appendix to Cobet's *Diogenes*, and his *Vitæ Scriptorum* (at p. 397) also contain (3) and (4*a*); Robbe, *op. cit.* gives (4*b*) and (4*c*). ROSE (*Arist. Lib. Ord.* 245), before the publication of (4*b*), ascribed the archetype of (4) to the younger Olympiodorus—a guess which may be called possible but not proven. Of later commentaries, cf. BUHLE, *Arist. Opp.* i. 80–104; STAHR, *Aristotelia* i. 1–188; BRANDIS, *Gr.-röm. Phil.* ii. b, i. pp. 48–65; GROTE'S *Arist.* (1872), i. 1–37, and GRANT'S *Arist.* (1877) pp. 1–29. Stahr discusses (p. 5 sqq.) the lost works of ancient writers which treated of Aristotle's life. We cannot be sure, as to any of the sources mentioned, what their basis or credibility may be. Rose's view that they one and all rest only on spurious texts and fanciful combinations (p. 115) is entirely unproved and improbable. Their value, however, beyond doubt differs widely; we can only test each statement by its inherent probability.

[2] According to APOLLODORUS *apud* DIOG. 9; no doubt on the basis of the statement (*ibid.* 10, DIONYS. and AMMON.) which may be accepted as the safest fixed point as to the date of Aristotle's life, that he died in the archonship of Philocles (Ol. 114, 3), about sixty-three years old (ἐτῶν τριῶν που καὶ ἑξήκοντα, or more exactly, as in Dionys., τρία πρὸς τοῖς ἑξήκοντα βιώσας ἔτη). Dionysius agrees, but erroneously talks of Demosthenes as three years younger than Aristotle, whereas he was born in the same year, or at most in the year before (in the beginning of Ol. 99, 1, or end of Ol. 98, 4); *vide* STAHR i. 30. Gellius' statement (*N. A.* xvii. 21, 25) that Aristotle was born in the seventh year after the freeing of Rome

B.C. 384.[1] Stagira, the city of his birth, was situated in that district of Thrace called Chalcidice,[2] which was at that date a thoroughly Hellenic country, with many flourishing cities, whose people were no doubt in full possession of all Greek culture.[3] His father Nicomachus

from the Gauls also agrees, since that event is referred to the year 364 A.U.C., or 390 B.C. So also the *V. Marc.* p. 3, and the *Ammon. Latin.* p. 12, assert that he was born under Diotrephes (Ol. 99, 1) and died sixty-three years old under Philocles. An otherwise unknown writer, EUMELUS (ap. DIOG. 6), asserts, on the other hand, that Aristotle lived to be seventy; but there is little reason to follow ROSE (p. 116) in preferring this account, since his next words, πιὼν ἀκόνιτον ἐτελεύτησεν, sufficiently show his lack of trustworthiness. In fact, as the manner of Socrates' death is here transferred to Aristotle, so is his age also; possibly by reason of the spurious *Apologia* ascribed to Aristotle (v. p. 35, n. 3, *infra*) and its parallelism with the Platonic *Apologia* of Socrates. But apart from the probability of this explanation, Eumelus is completely displaced by the agreement of all the other testimony, including that of so careful a chronologist as Apollodorus. A reliable tradition as to the age of their founder must have existed in the Peripatetic School. How could all our witnesses, except this one unknown and badly-informed writer, have come to agree upon a false statement of it when the truth could have been easily ascertained?

[1] That he was born in the first half of the Olympiad, or in 384 B.C., follows from the accounts as to his death above, and would also follow from our information as to his residence at Athens, if the figures are to be taken strictly (cf. p. 6, n. 3, *infra*). For if, at seventeen, he came to Athens and was with Plato for twenty years, he must have been thirty-seven years old at Plato's death; so that, if we put his exact age at 36½ and bring down Plato's death to the middle of 347 B.C., his birth would still fall in the latter half of 384 B.C. It is, however, also possible that his stay in Athens did not cover the full twenty years.

[2] So called because most of its cities were colonies of Chalcis in Eubœa. Stagira itself was originally colonised from Andros, but perhaps (cf. DIONYS. *ut supra*) received a later contribution of second founders from Chalcis. In 348 B.C., it was, with thirty-one other cities of that district, sacked by Philip, but was afterwards on Aristotle's intercession restored (v. p. 24, *infra*). Vide STAHR, 23, who discusses also the form of the name (Στάγειρος, or Στάγειρα as a neuter plural). We do not know whether Aristotle's family house (mentioned in his will, *ap.* DIOG. 14) was spared in the destruction of the town or was subsequently rebuilt.

[3] Bernays (*Dial. Arist.* ii. 55, 134) calls Aristotle a 'half Greek,' but Grote (i. 3) and

was the body-surgeon and friend of the Macedonian King Amyntas [1]; and it is natural to suppose that the father's profession—long hereditary in the family—must have influenced the mental character and education of the son, and that this early connection with the Macedonian Court prepared the way for the employment of Aristotle in the same Court at a later time. On neither of these points, however, have we any positive information. We may also assume that Nicomachus took his family with

Grant (p. 2) rightly maintain against him that a Greek family in a Greek colony in which only Greek was spoken, could keep their nationality perfectly pure. Aristotle was not an *Athenian*, and though Athens was his philosophical home, traces can yet be found in him of the fact that his political sense had its training elsewhere; but he was as truly a *Hellene* as Pythagoras, Xenophanes, Parmenides, Anaxagoras, Democritus, or the rest. The 'un-Greek' element which Bernays and W. von Humboldt (in his letter to Wolf, *Werke*, v. 125) find in Aristotle is doubtless to be connected not so much with the place of his birth as with the characteristics of his generation and his individual bent of mind. The full-born Athenian Socrates exhibits traits far more singular and seemingly un-Greek as compared with his own people and time than Aristotle, and if the typical writings of Aristotle appear un-Greek in comparison with Plato's, still, on the one hand, this is not true of his Dialogues, and, on the other hand, equally great divergencies are to be found between men whose surroundings and training were so closely similar as those of Schelling and Hegel, or of Baur and Strauss.

[1] *Vide* DIOG. i. (quoting Hermippus), DIONYS., *Ps. Amm.*, *V. Marc.*, *Ammon. Latin.*, and SUIDAS. The family of Nicomachus, according to these authorities, traced its descent, as did so many medical families, to Asclepius. TZETZES, *Chil.* x. 727, xii. 638, gives no ground for doubting this. The three recensions of the Pseudo-Ammonius repeat this same statement as to the family of Aristotle's mother, Phaistis, but erroneously; for Diogenes tells us she was a Stagirite by birth, and Dionysius says that she was a descendant of one of the colonists from Chalcis. This connection might account for the mention of a country house and garden at Chalcis in the testament (DIOG. 14). The statement in Suidas, *sub voce* Νικόμαχος, that a person of that name had written six books of Ἰατρικὰ and one book of Φυσικὰ refers, according to our text, not to the father of Aristotle (cf. BUHLE, 83, STAHR, 34), but to an ancestor of the same name; though no

him to reside near the king,[1] but we cannot tell how old Aristotle then was, or how long this state of things lasted, or what personal relations resulted from it. Equally little knowledge have we as to the early development of his mind, or the circumstances or method of his education.[2] The sole piece of information we have as to this section of his life is the remark of the Pseudo-Ammonius [3] that after the death of both his parents,[4] one Proxenus of Atarneus [5] took over his education, so that in later life the grateful pupil did the like service for Proxenus' son Nicanor, of whom he took charge while he was a child, and to whom he gave his own daughter in marriage. Notwithstanding the untrustworthy character of our informant,[6] the story seems to be true [7];

doubt the story did refer originally to his father. The Anon. Menagii (with *V. Marc.* 1, and *Ammon. Latin.* 1) mentions a brother and sister of Aristotle.

[1] For Diog. 1, following Hermippus, says expressly: *συνεβίω* [Νικόμαχος] Ἀμύντᾳ τῷ Μακεδόνων *βασιλεῖ ἰατροῦ καὶ φίλου χρείᾳ.* He must therefore have taken up his residence in Pella and cannot have left his family in Stagira.

[2] Galen's statement (*Anatom. Administr.* ii. 1, vol. ii. 280 K) that the Asclepiad families practised their sons *ἐκ παίδων* in reading, writing, and *ἀνατέμνειν*, does not help us much, as (apart from the question whether the information is fully credible) we do not know how old Aristotle was at his father's death. It is doubtful whether Galen meant human or animal anatomy; cf. p. 89, n. 1 *fin.*

[3] In all three recensions, p. 43 etc., cf. BUHLE, 1 sq. (lege *τροφῆς* for *φήμης*) 10 sq. ROBBE.

[4] In his will (DIOG. 16) Aristotle mentions his mother and orders a monument to be erected to her. Pliny (*H. Nat.* xxxv. 10, 106) mentions a picture of her which Aristotle had painted by Protogenes. There may have been many reasons why his father was not mentioned in the will.

[5] Apparently a relative who had emigrated to Stagira, for his son Nicanor is called *Σταγειρίτης* and *οἰκεῖος Ἀριστοτέλους* (SEXT. MATH. i. 258).

[6] What trust is to be placed in a writer who tells us, *inter alia*, that Aristotle was for three years a pupil of Socrates and that he afterwards accompanied Alexander to India? (*Ps. Ammon.* p. 44, 50, 48, *V. Marc.* 2, 5, *Ammon. Lat.* 11, 12, 14).

[7] Aristotle in his will (DIOG. 12) directs that Nicanor is to marry

but it throws no further light on that which necessarily interests us most, the history of Aristotle's intellectual growth.[1]

His entrance into the Platonic School[2] gives us our earliest reliable data on the subject. In his eighteenth year Aristotle came to Athens[3] and entered the circle of

his daughter when she is grown up; he charges him to take care of her and her brothers, ὡς καὶ πατὴρ ὢν καὶ ἀδελφός; he orders that the portraits of Nicanor, Proxenus, and Nicanor's mother, which he had projected, should be completed, and that if Nicanor completed his journey successfully (*v. infra*), a votive offering he had promised should be set up in Stagira. These arrangements prove that Nicanor was adopted by Aristotle, and that Aristotle owed special gratitude to Nicanor's mother as well as to Proxenus, apparently similar to that he owed his own mother, of whom a similar portrait is ordered. If we assume the truth of the story in the Pseudo-Ammonius it will most naturally explain the whole. Dionysius notes that Nicomachus was dead when Aristotle came to Plato. It might appear that, as Aristotle died at sixty-three, the son of his foster-parents would be too old to marry a daughter not then grown up; but this does not follow. If Aristotle was a child at his father's death, and Proxenus a young man, the latter might have left a son twenty or twenty-five years younger than Aristotle, and some ten years younger than Theophrastus (then at least forty-seven) whom Pythias was to marry in case of Nicanor's death (DIOG. 13).—This Nicanor is probably the same Nicanor of Stagira whom Alexander sent from Asia to Greece to announce his consent to the return of the exiles at the Olympian games of 324 B.C.(DINARCH. *Adv. Demosth.* 81, 103, DIODOR. xviii.8; cf. the pseudo-Aristotelian *Rhet. ad Alex.* i, 1421, a, 38, and GROTE, p. 14). And the vow in Aristotle's will probably relates to a journey to Alexander's headquarters where he had given an account of his mission and been detained on service in Asia. It is probably the same Nicanor who was governor of Cappadocia under Antipater (Arrian *apud* PHOT. *Cod.* 92, p. 72, a, 6) and who was made away with, in B.C. 318, by Cassander, for whom he had done good service on sea and land (DIODOR. xviii. 64 sq. 68, 72, 75). The dates agree exactly with what we know of Pythias, as to whom see p. 20, n. 3, *infra*.

[1] We know nothing of the age at which Aristotle came to Proxenus, nor of the manner or place of his education, for it was probably not at Atarneus —see above, p. 5, n. 5.

[2] A silly story in *Ps. Amm.* 44, *V. Marc.* 2, and *Ammon. Latin.* 11 relates that he was sent by the Delphic Oracle.

[3] APOLLODOR. *ap.* DIOG. 9: παραβαλεῖν δὲ Πλάτωνι, καὶ δια-

Plato's scholars,[1] to which he continued to belong for

τρίψαι παρ' αὐτῷ εἴκοσιν ἔτη, ἑπτὰ καὶ δέκα ἐτῶν συστάντα. This testimony seems to be the basis of the statements of Dionysius (p. 728) that he came to Athens in his eighteenth year, of Diogenes 6, that he came ἑπτακαιδεκέτης, and of the three recensions of the Ammonius Life that he came ἑπτακαίδεκα ἐτῶν γενόμενος. We have also the chronology of Dionysius, who places his arrival in the archonship of Polyzelos (366–7 B.C. Ol. 103, 2), while the statement (*V. Marc.* 3, *Ammon. Latin.* 12) that he came in the archonship of Nausigenes (Ol. 103, 1) takes us to the middle of his seventeenth year instead of the completion of it. Eusebius in his *Chronicle* knows that he arrived at seventeen, but places the event erroneously in Ol. 104, 1.—The statement of Eumelus (*apud* DIOG. 6) that he was thirty years old when he met Plato is combined by Grote (p. 3 sq.) with the accounts of Epicurus and Timæus as to his dissolute youth (cf. *infra*), but without deciding between the two accounts. We have already seen how little credit attaches to Eumelus' account of Aristotle's age and manner of death (p. 2, n. 2); but the two statements are connected and fall together, for, as Aristotle composed an elegy and the Dialogue named *Eudemus* in memory of a fellow-student, Eudemus of Cyprus (p. 11, n. 4, *infra*), who went to Sicily with Dion in 357 B.C. and was killed there, it follows that Aristotle, if he were thirty when he came to Athens, would have been born several years before 384.—We do not know, moreover, when Eumelus lived, or from whom he got his information. If, as is possible, he be Eumelus the Peripatetic, whose Περὶ τῆς ἀρχαίας κωμῳδίας is quoted by a scholiast to Æschines' *Timarch.* (ed. Bekker, *Abh. d. Berl. Akad.* 1836, *Hist.-phil. Kl.* 230, § 39; cf. ROSE, *Arist. Libr. Ord.* 113), he would belong to the Alexandrine, or possibly even the post-Alexandrine period. In no case, as above shown, can he merit our confidence. As to Epicurus and Timæus *vide* p. 9, n. 1, *infra*.—The *Vita Marciana* finds it necessary to refute the story that Aristotle came to Plato in his fortieth year. The *Latin Ammonius* reproduces this in a still more absurd form, to which he adapts other parts of his story; for he says that it was thought by many that Aristotle remained forty years with Plato. His translation 'xl annis immoratus est sub Platone' probably means that the text of the archetype was μ' ἔτη γεγονὼς ἦν ὑπὸ Πλάτωνι, or μ' ἐτῶν ὢν ἐνδιέτριβεν, &c. If the latter be supposed, the mistake might well have arisen by the dropping out of ὢν in the translator's MS.

[1] Plato himself was probably at the moment absent on his second Sicilian journey (*vide* ZELLER, *Plato*, p. 32). Stahr (p. 43) suggests that the above-mentioned statement that he was three years with Socrates and after his death followed Plato (*Ps. Amm.* 44, 50, *V. Marc.* 2, *Ammon. Lat.* 11, 12, OLYMPIOD. *in Gorg.* 42) arose from a misunderstanding of this circumstance. The archetype may have contained the

twenty years until the master died.[1] It would have been of the greatest value if we could have known in detail something of this long period of preparation, in which the foundations of his extraordinary learning and of his distinctive philosophical system must have been laid. Unhappily our informants pass over all the important questions as to the movement and history of his mental development in absolute silence, and entertain us instead with all manner of evil tales as to his life and character. One of these writers had heard that he first earned his bread as a quack-doctor.[2] Another alleges that he first squandered his patrimony, then in his distress went into military service, afterwards, being unsuccessful, took to selling medicines, and finally took refuge in Plato's school.[3] This gossip, however, was

statement that Aristotle spent three years in Athens without hearing Plato, in attending other Socratic teachers, for whom the transcriber erroneously inserted the name of Socrates himself. On a similar supposition, we might guess that the archetype said that in Plato's absence, Aristotle was with *Xenocrates*: or with *Isocrates*, whose name is often confused with Socrates. It seems more probable, however, that the origin of the error lay in the remark in a letter to Philip (whether genuine or spurious) mentioned in the *Vita Marciana* and the *Latin Ammonius*, to the effect that Aristotle made Plato's acquaintance in his twentieth year—perhaps because Plato then returned from Sicily, perhaps because Aristotle had till then been of the school of Isocrates.

[1] Cf. p. 6, n. 3, and Dionysius, *ut supra*: συσταθεὶς Πλάτωνι χρόνον εἰκοσαετῆ διέτριψε σὺν αὐτῷ. or as in *Amm.*, τούτῳ σύνεστιν ἔτη εἴκοσι.

[2] ARISTOCL. *ap.* EUS. *Præp. Ev.* xv. 2, 1: πῶς ἄν τις ἀποδέξαιτο Τιμαίου τοῦ Ταυρομενίτου λέγοντος ἐν ταῖς ἱστορίαις, ἀδόξου θύρας αὐτὸν ἰατρείου καὶ τὰς τυχούσας (*hiatus*) ὀψὲ τῆς ἡλικίας κλεῖσαι. The same is more fully cited from Timæus by POLYB. xii. 7, and SUIDAS, sub v. Ἀριστοτέλης.

[3] Aristocl. *ut supra*: πῶς γὰρ οἷόν τε, καθάπερ φησὶν Ἐπίκουρος ἐν τῇ περὶ τῶν ἐπιτηδευμάτων ἐπιστολῇ, νέον μὲν ὄντα καταφαγεῖν αὐτὸν τὴν πατρῴαν οὐσίαν, ἔπειτα δὲ ἐπὶ τὸ στρατεύεσθαι συνεῶσθαι, κακῶς δὲ πράττοντα ἐν τούτοις ἐπὶ τὸ φαρμακοπωλεῖν ἐλθεῖν, ἔπειτα ἀναπεπταμένου τοῦ Πλάτωνος περιπάτου πᾶσι, παραλαβεῖν αὐτὸν (*lege*, according to Athen. παραβαλεῖν

rightly rejected even by Aristocles.[1] Greater weight attaches to the story of the breach between Plato and his scholar which is said to have occurred some time before the former died. So early a writer as Eubulides the

αὐτὸν, scil. εἰς τὸν περίπατον): cf. the same passage quoted in similar words, *apud* ATHEN. viii. 354, *apud* DIOG. x. 8, and less closely *apud* ÆLIAN. *V. H.* v. 9.

[1] In the first place, it is without any reliable authority. Even in antiquity no other testimony than Epicurus and Timæus is known, and except these two, none, as Athenæus expressly remarks, even of Aristotle's bitterest opponents mentioned these stories. Timæus's reckless slanderousness, however, is well known, and he was embittered against Aristotle by his statements (historically correct as they were) as to the low origin of the Locrians (cf. POLYB. xii. 7, 10; PLUT. *Dio.* 36, *Nic.* 1; DIODOR. v. 1). So also of Epicurus we know that there was hardly one of his philosophic predecessors or contemporaries (not excepting Democritus and Nausiphanes, to whom he was under large obligations) whom he did not attack with calumnies and depreciatory criticism (cf. DIOG. x. 8, 13; SEXT. MATH. i. 3 sq.; CIC. *N. D.* 1, 33, 93, 26, 73; ZELLER, *Ph. d. Gr.* I. p. 946, n). Statements by such men, betraying as they do a tone of hatred, must be taken with great distrust; and their agreement is no guarantee, for it is possible that Timæus copied Epicurus, or (as we may better think) that Epicurus copied him. Not only, however, have we against them the consensus of many far more credible writers who say that Aristotle devoted himself from his eighteenth year to his studies at Athens, but the other story is in itself most improbable. If Aristotle were no more than the σοφιστὴς θρασὺς εὐχερὴς προπετὴς that Timæus calls him, he might perhaps have been ὀψιμαθὴς also. But when we know that apart from philosophical greatness, he was the foremost man of learning of his time, and was also famous as a writer for his graces of style, we must think it unparalleled and incredible that his thirst for learning should have first arisen at thirty after a wasted youth, and that he could then have achieved attainments hardly credible as the work of a long lifetime. All we know of Aristotle from his writings or otherwise impresses us with a sense of personal superiority incompatible with these tales of his youth; not to speak of the argument that if he had squandered his property he could hardly have found means to live at Athens. Grote (cf. p. 6, n. 3, *supra*) does too much honour to Epicurus and Timæus when he treats their testimony as balancing the other. They are probably naked and baseless lies, and therefore we ought not even to infer from them with Stahr (p. 38 sq.) and Bernays (*Abh. d. Bresl. Hist.-phil. Gesellschaft*, i. 193), that Aristotle probably practised medicine in Athens while he was studying natural philosophy.

city, and not hindered by any personal ties from giving to his philosophy that purely theoretic and impartial character which became its distinctive praise.[1]

The birth of Aristotle falls, according to the most probable reckoning, in the first year of the 99th Olympiad,[2]

[1] The old accounts of Aristotle's life now extant are (1) DIOGENES, v. 1–35 (far the most copious); (2) DIONYSIUS of Halicarnassus, *Epist. ad Ammæum*, i. 5, p. 727 sq.; (3) Ἀριστ. βίος καὶ συγγράμματα αὐτοῦ, by the *Anonymus Menagii*; (4) another sketch of his life, known to us in three forms: (*a*) the Βίος first printed in the Aldine ed. of Arist. *Opp.* 1496–98 (which is there ascribed to Philoponus, elsewhere to Ammonius, but belongs to neither), here cited as the *Pseudo-Ammonius* (or *Amm.*); (*b*) the Life published from the Codex Marcianus by Robbe in 1861, cited as *Vita Marciana* (or *V. Marc.*); (*c*) the Life cited as the *Latin Ammonius*, preserved in an ancient translation, which approaches more closely to the *Vita Marciana* than to the *Pseudo-Ammonius* itself; (5) Ἡσυχίου Μιλησίου περὶ τοῦ Ἀριστοτέλους; (6) SUIDAS, *sub voce* Ἀριστοτέλης. All of these, except (4*b*), are to be found in BUHLE, *Arist. Opp.* i. 1–79. Westermann's appendix to Cobet's *Diogenes*, and his *Vitæ Scriptorum* (at p. 397) also contain (3) and (4*a*); Robbe, *op. cit.* gives (4*b*) and (4*c*). ROSE (*Arist. Lib. Ord.* 245), before the publication of (4*b*), ascribed the archetype of (4) to the younger Olympiodorus—a guess which may be called possible but not proven. Of later commentaries, cf. BUHLE, *Arist. Opp.* i. 80–104; STAHR, *Aristotelia* i. 1–188; BRANDIS, *Gr.-röm. Phil.* ii. b, i. pp. 48–65; GROTE'S *Arist.* (1872), i. 1–37, and GRANT'S *Arist.* (1877) pp. 1–29. Stahr discusses (p. 5 sqq.) the lost works of ancient writers which treated of Aristotle's life. We cannot be sure, as to any of the sources mentioned, what their basis or credibility may be. Rose's view that they one and all rest only on spurious texts and fanciful combinations (p. 115) is entirely unproved and improbable. Their value, however, beyond doubt differs widely; we can only test each statement by its inherent probability.

[2] According to APOLLODORUS *apud* DIOG. 9; no doubt on the basis of the statement (*ibid.* 10, DIONYS. and AMMON.) which may be accepted as the safest fixed point as to the date of Aristotle's life, that he died in the archonship of Philocles (Ol. 114, 3), about sixty-three years old (ἐτῶν τριῶν που καὶ ἑξήκοντα, or more exactly, as in Dionys., τρία πρὸς τοῖς ἑξήκοντα βιώσας ἔτη). Dionysius agrees, but erroneously talks of Demosthenes as three years younger than Aristotle, whereas he was born in the same year, or at most in the year before (in the beginning of Ol. 99, 1, or end of Ol. 98, 4); *vide* STAHR i. 30. Gellius' statement (*N.A.* xvii. 21, 25) that Aristotle was born in the seventh year after the freeing of Rome

B.C. 384.[1] Stagira, the city of his birth, was situated in that district of Thrace called Chalcidice,[2] which was at that date a thoroughly Hellenic country, with many flourishing cities, whose people were no doubt in full possession of all Greek culture.[3] His father Nicomachus

from the Gauls also agrees, since that event is referred to the year 364 A.U.C., or 390 B.C. So also the *V. Marc.* p. 3, and the *Ammon. Latin.* p. 12, assert that he was born under Diotrephes (Ol. 99, 1) and died sixty-three years old under Philocles. An otherwise unknown writer, EUMELUS (ap. DIOG. 6), asserts, on the other hand, that Aristotle lived to be seventy; but there is little reason to follow ROSE (p. 116) in preferring this account, since his next words, πιὼν ἀκόνιτον ἐτελεύτησεν, sufficiently show his lack of trustworthiness. In fact, as the manner of Socrates' death is here transferred to Aristotle, so is his age also; possibly by reason of the spurious *Apologia* ascribed to Aristotle (v. p. 35, n. 3, *infra*) and its parallelism with the Platonic *Apologia* of Socrates. But apart from the probability of this explanation, Eumelus is completely displaced by the agreement of all the other testimony, including that of so careful a chronologist as Apollodorus. A reliable tradition as to the age of their founder must have existed in the Peripatetic School. How could all our witnesses, except this one unknown and badly-informed writer, have come to agree upon a false statement of it when the truth could have been easily ascertained?

[1] That he was born in the first half of the Olympiad, or in 384 B.C., follows from the accounts as to his death above, and would also follow from our information as to his residence at Athens, if the figures are to be taken strictly (cf. p. 6, n. 3, *infra*). For if, at seventeen, he came to Athens and was with Plato for twenty years, he must have been thirty-seven years old at Plato's death; so that, if we put his exact age at 36½ and bring down Plato's death to the middle of 347 B.C., his birth would still fall in the latter half of 384 B.C. It is, however, also possible that his stay in Athens did not cover the full twenty years.

[2] So called because most of its cities were colonies of Chalcis in Eubœa. Stagira itself was originally colonised from Andros, but perhaps (cf. DIONYS. *ut supra*) received a later contribution of second founders from Chalcis. In 348 B.C., it was, with thirty-one other cities of that district, sacked by Philip, but was afterwards on Aristotle's intercession restored (v. p. 24, *infra*). Vide STAHR, 23, who discusses also the form of the name (Στάγειρος, or Στάγειρα as a neuter plural). We do not know whether Aristotle's family house (mentioned in his will, *ap.* DIOG. 14) was spared in the destruction of the town or was subsequently rebuilt.

[3] Bernays (*Dial. Arist.* ii. 55, 134) calls Aristotle a 'half Greek,' but Grote (i. 3) and

was the body-surgeon and friend of the Macedonian King Amyntas[1]; and it is natural to suppose that the father's profession—long hereditary in the family—must have influenced the mental character and education of the son, and that this early connection with the Macedonian Court prepared the way for the employment of Aristotle in the same Court at a later time. On neither of these points, however, have we any positive information. We may also assume that Nicomachus took his family with

Grant (p. 2) rightly maintain against him that a Greek family in a Greek colony in which only Greek was spoken, could keep their nationality perfectly pure. Aristotle was not an *Athenian*, and though Athens was his philosophical home, traces can yet be found in him of the fact that his political sense had its training elsewhere; but he was as truly a *Hellene* as Pythagoras, Xenophanes, Parmenides, Anaxagoras, Democritus, or the rest. The 'un-Greek' element which Bernays and W. von Humboldt (in his letter to Wolf, *Werke*, v. 125) find in Aristotle is doubtless to be connected not so much with the place of his birth as with the characteristics of his generation and his individual bent of mind. The full-born Athenian Socrates exhibits traits far more singular and seemingly un-Greek as compared with his own people and time than Aristotle, and if the typical writings of Aristotle appear un-Greek in comparison with Plato's, still, on the one hand, this is not true of his Dialogues, and, on the other hand, equally great divergencies are to be found between men whose surroundings and training were so closely similar as those of Schelling and Hegel, or of Baur and Strauss.

[1] *Vide* DIOG. i. (quoting Hermippus), DIONYS., *Ps. Amm.*, *V. Marc.*, *Ammon. Latin.*, and SUIDAS. The family of Nicomachus, according to these authorities, traced its descent, as did so many medical families, to Asclepius. TZETZES, *Chil.* x. 727, xii. 638, gives no ground for doubting this. The three recensions of the Pseudo-Ammonius repeat this same statement as to the family of Aristotle's mother, Phaistis, but erroneously; for Diogenes tells us she was a Stagirite by birth, and Dionysius says that she was a descendant of one of the colonists from Chalcis. This connection might account for the mention of a country house and garden at Chalcis in the testament (DIOG. 14). The statement in Suidas, *sub voce* Νικόμαχος, that a person of that name had written six books of Ἰατρικὰ and one book of Φυσικὰ refers, according to our text, not to the father of Aristotle (cf. BUHLE, 83, STAHR, 34), but to an ancestor of the same name; though no

him to reside near the king,[1] but we cannot tell how old Aristotle then was, or how long this state of things lasted, or what personal relations resulted from it. Equally little knowledge have we as to the early development of his mind, or the circumstances or method of his education.[2] The sole piece of information we have as to this section of his life is the remark of the Pseudo-Ammonius [3] that after the death of both his parents,[4] one Proxenus of Atarneus [5] took over his education, so that in later life the grateful pupil did the like service for Proxenus' son Nicanor, of whom he took charge while he was a child, and to whom he gave his own daughter in marriage. Notwithstanding the untrustworthy character of our informant,[6] the story seems to be true [7];

doubt the story did refer originally to his father. The Anon. Menagii (with *V. Marc.* 1, and *Ammon. Latin.* 1) mentions a brother and sister of Aristotle.

[1] For Diog. 1, following Hermippus, says expressly: *συνεβίω* [*Νικόμαχος*] *Ἀμύντᾳ τῷ Μακεδόνων βασιλεῖ ἰατροῦ καὶ φίλου χρείᾳ*. He must therefore have taken up his residence in Pella and cannot have left his family in Stagira.

[2] Galen's statement (*Anatom. Administr.* ii. 1, vol. ii. 280 K) that the Asclepiad families practised their sons *ἐκ παίδων* in reading, writing, and *ἀνατέμνειν*, does not help us much, as (apart from the question whether the information is fully credible) we do not know how old Aristotle was at his father's death. It is doubtful whether Galen meant human or animal anatomy; cf. p. 89, n. 1 *fin.*

[3] In all three recensions, p. 43 etc., cf. BUHLE, 1 sq. (lege *τροφῆς* for *φήμης*) 10 sq. ROBBE.

[4] In his will (DIOG. 16) Aristotle mentions his mother and orders a monument to be erected to her. Pliny (*H. Nat.* xxxv. 10, 106) mentions a picture of her which Aristotle had painted by Protogenes. There may have been many reasons why his father was not mentioned in the will.

[5] Apparently a relative who had emigrated to Stagira, for his son Nicanor is called *Σταγειρίτης* and *οἰκεῖος Ἀριστοτέλους* (SEXT. MATH. i. 258).

[6] What trust is to be placed in a writer who tells us, *inter alia*, that Aristotle was for three years a pupil of Socrates and that he afterwards accompanied Alexander to India? (*Ps. Ammon.* p. 44, 50, 48, *V. Marc.* 2, 5, *Ammon. Lat.* 11, 12, 14).

[7] Aristotle in his will (DIOG. 12) directs that Nicanor is to marry

but it throws no further light on that which necessarily interests us most, the history of Aristotle's intellectual growth.[1]

His entrance into the Platonic School [2] gives us our earliest reliable data on the subject. In his eighteenth year Aristotle came to Athens [3] and entered the circle of

his daughter when she is grown up; he charges him to take care of her and her brothers, ὡς καὶ πατὴρ ὢν καὶ ἀδελφός; he orders that the portraits of Nicanor, Proxenus, and Nicanor's mother, which he had projected, should be completed, and that if Nicanor completed his journey successfully (*v. infra*), a votive offering he had promised should be set up in Stagira. These arrangements prove that Nicanor was adopted by Aristotle, and that Aristotle owed special gratitude to Nicanor's mother as well as to Proxenus, apparently similar to that he owed his own mother, of whom a similar portrait is ordered. If we assume the truth of the story in the Pseudo-Ammonius it will most naturally explain the whole. Dionysius notes that Nicomachus was dead when Aristotle came to Plato. It might appear that, as Aristotle died at sixty-three, the son of his foster-parents would be too old to marry a daughter not then grown up; but this does not follow. If Aristotle was a child at his father's death, and Proxenus a young man, the latter might have left a son twenty or twenty-five years younger than Aristotle, and some ten years younger than Theophrastus (then at least forty-seven) whom Pythias was to marry in case of Nicanor's death (DIOG. 13).—This Nicanor is probably the same Nicanor of Stagira whom Alexander sent from Asia to Greece to announce his consent to the return of the exiles at the Olympian games of 324 B.C. (DINARCH. *Adv. Demosth.* 81, 103, DIODOR. xviii. 8; cf. the pseudo-Aristotelian *Rhet. ad Alex.* i, 1421, a, 38, and GROTE, p. 14). And the vow in Aristotle's will probably relates to a journey to Alexander's headquarters where he had given an account of his mission and been detained on service in Asia. It is probably the same Nicanor who was governor of Cappadocia under Antipater (Arrian *apud* PHOT. *Cod.* 92, p. 72, a, 6) and who was made away with, in B.C. 318, by Cassander, for whom he had done good service on sea and land (DIODOR. xviii. 64 sq. 68, 72, 75). The dates agree exactly with what we know of Pythias, as to whom see p. 20, n. 3, *infra*.

[1] We know nothing of the age at which Aristotle came to Proxenus, nor of the manner or place of his education, for it was probably not at Atarneus —see above, p. 5, n. 5.

[2] A silly story in *Ps. Amm.* 44, *V. Marc.* 2, and *Ammon. Latin.* 11 relates that he was sent by the Delphic Oracle.

[3] APOLLODOR. *ap.* DIOG. 9: παραβαλεῖν δὲ Πλάτωνι, καὶ δια-

Plato's scholars,[1] to which he continued to belong for

τρίψαι παρ' αὐτῷ εἴκοσιν ἔτη, ἑπτὰ καὶ δέκα ἐτῶν συστάντα. This testimony seems to be the basis of the statements of Dionysius (p. 728) that he came to Athens in his eighteenth year, of Diogenes 6, that he came ἑπτακαιδεκέτης, and of the three recensions of the Ammonius Life that he came ἑπτακαίδεκα ἐτῶν γενόμενος. We have also the chronology of Dionysius, who places his arrival in the archonship of Polyzelos (366–7 B.C. Ol. 103, 2), while the statement (*V. Marc.* 3, *Ammon. Latin.* 12) that he came in the archonship of Nausigenes (Ol. 103, 1) takes us to the middle of his seventeenth year instead of the completion of it. Eusebius in his *Chronicle* knows that he arrived at seventeen, but places the event erroneously in Ol. 104, 1.—The statement of Eumelus (*apud* DIOG. 6) that he was thirty years old when he met Plato is combined by Grote (p. 3 sq.) with the accounts of Epicurus and Timæus as to his dissolute youth (cf. *infra*), but without deciding between the two accounts. We have already seen how little credit attaches to Eumelus' account of Aristotle's age and manner of death (p. 2, n. 2); but the two statements are connected and fall together, for, as Aristotle composed an elegy and the Dialogue named *Eudemus* in memory of a fellow-student, Eudemus of Cyprus (p. 11, n. 4, *infra*), who went to Sicily with Dion in 357 B.C. and was killed there, it follows that Aristotle, if he were thirty when he came to Athens, would have been born several years before 384.—We do not know, moreover, when Eumelus lived, or from whom he got his information. If, as is possible, he be Eumelus the Peripatetic, whose Περὶ τῆς ἀρχαίας κωμῳδίας is quoted by a scholiast to Æschines' *Timarch.* (ed. Bekker, *Abh. d. Berl. Akad.* 1836, *Hist.-phil. Kl.* 230, § 39; cf. ROSE, *Arist. Libr. Ord.* 113), he would belong to the Alexandrine, or possibly even the post-Alexandrine period. In no case, as above shown, can he merit our confidence. As to Epicurus and Timæus *vide* p. 9, n. 1, *infra*.—The *Vita Marciana* finds it necessary to refute the story that Aristotle came to Plato in his fortieth year. The *Latin Ammonius* reproduces this in a still more absurd form, to which he adapts other parts of his story; for he says that it was thought by many that Aristotle remained forty years with Plato. His translation 'xl annis immoratus est sub Platone' probably means that the text of the archetype was μ' ἔτη γεγονὼς ἦν ὑπὸ Πλάτωνι, or μ' ἐτῶν ὢν ἐνδιέτριβεν, &c. If the latter be supposed, the mistake might well have arisen by the dropping out of ὢν in the translator's MS.

[1] Plato himself was probably at the moment absent on his second Sicilian journey (*vide* ZELLER, *Plato*, p. 32). Stahr (p. 43) suggests that the above-mentioned statement that he was three years with Socrates and after his death followed Plato (*Ps. Amm.* 44, 50, *V. Marc.* 2, *Ammon. Lat.* 11, 12, OLYMPIOD. *in Gorg.* 42) arose from a misunderstanding of this circumstance. The archetype may have contained the

twenty years until the master died.[1] It would have been of the greatest value if we could have known in detail something of this long period of preparation, in which the foundations of his extraordinary learning and of his distinctive philosophical system must have been laid. Unhappily our informants pass over all the important questions as to the movement and history of his mental development in absolute silence, and entertain us instead with all manner of evil tales as to his life and character. One of these writers had heard that he first earned his bread as a quack-doctor.[2] Another alleges that he first squandered his patrimony, then in his distress went into military service, afterwards, being unsuccessful, took to selling medicines, and finally took refuge in Plato's school.[3] This gossip, however, was

statement that Aristotle spent three years in Athens without hearing Plato, in attending other Socratic teachers, for whom the transcriber erroneously inserted the name of Socrates himself. On a similar supposition, we might guess that the archetype said that in Plato's absence, Aristotle was with *Xenocrates*: or with *Isocrates*, whose name is often confused with Socrates. It seems more probable, however, that the origin of the error lay in the remark in a letter to Philip (whether genuine or spurious) mentioned in the *Vita Marciana* and the *Latin Ammonius*, to the effect that Aristotle made Plato's acquaintance in his twentieth year—perhaps because Plato then returned from Sicily, perhaps because Aristotle had till then been of the school of Isocrates.

[1] Cf. p. 6, n. 3, and Dionysius, *ut supra*: συσταθεὶς Πλάτωνι χρόνον εἰκοσαετῆ διέτριψε σὺν αὐτῷ. or as in *Amm.*, τούτῳ σύνεστιν ἔτη εἴκοσι.

[2] ARISTOCL. *ap.* EUS. *Præp. Ev.* xv. 2, 1: πῶς ἄν τις ἀποδέξαιτο Τιμαίου τοῦ Ταυρομενίτου λέγοντος ἐν ταῖς ἱστορίαις, ἀδόξου θύρας αὐτὸν ἰατρείου καὶ τὰς τυχούσας (*hiatus*) ὀψὲ τῆς ἡλικίας κλεῖσαι. The same is more fully cited from Timæus by POLYB. xii. 7, and SUIDAS, sub v. Ἀριστοτέλης.

[3] Aristocl. *ut supra*: πῶς γὰρ οἷόν τε, καθάπερ φησὶν Ἐπίκουρος ἐν τῇ περὶ τῶν ἐπιτηδευμάτων ἐπιστολῇ, νέον μὲν ὄντα καταφαγεῖν αὐτὸν τὴν πατρῴαν οὐσίαν, ἔπειτα δὲ ἐπὶ τὸ στρατεύεσθαι συνεῶσθαι, κακῶς δὲ πράττοντα ἐν τούτοις ἐπὶ τὸ φαρμακοπωλεῖν ἐλθεῖν, ἔπειτα ἀναπεπταμένου τοῦ Πλάτωνος περιπάτου πᾶσι, παραλαβεῖν αὑτὸν (*lege*, according to Athen. παραβαλεῖν

rightly rejected even by Aristocles.[1] Greater weight attaches to the story of the breach between Plato and his scholar which is said to have occurred some time before the former died. So early a writer as Eubulides the

αὐτὸν, scil. εἰς τὸν περίπατον): cf. the same passage quoted in similar words, *apud* ATHEN. viii. 354, *apud* DIOG. x. 8, and less closely *apud* ÆLIAN. *V. H.* v. 9.

[1] In the first place, it is without any reliable authority. Even in antiquity no other testimony than Epicurus and Timæus is known, and except these two, none, as Athenæus expressly remarks, even of Aristotle's bitterest opponents mentioned these stories. Timæus's reckless slanderousness, however, is well known, and he was embittered against Aristotle by his statements (historically correct as they were) as to the low origin of the Locrians (cf. POLYB. xii. 7, 10; PLUT. *Dio.* 36, *Nic.* 1; DIODOR. v. 1). So also of Epicurus we know that there was hardly one of his philosophic predecessors or contemporaries (not excepting Democritus and Nausiphanes, to whom he was under large obligations) whom he did not attack with calumnies and depreciatory criticism (cf. DIOG. x. 8, 13; SEXT. MATH. i. 3 sq.; CIC. *N. D.* 1, 33, 93, 26, 73; ZELLER, *Ph. d. Gr.* I. p. 946, n). Statements by such men, betraying as they do a tone of hatred, must be taken with great distrust; and their agreement is no guarantee, for it is possible that Timæus copied Epicurus, or (as we may better think) that Epicurus copied him. Not only, however, have we against them the consensus of many far more credible writers who say that Aristotle devoted himself from his eighteenth year to his studies at Athens, but the other story is in itself most improbable. If Aristotle were no more than the σοφιστὴς θρασὺς εὐχερὴς προπετὴς that Timæus calls him, he might perhaps have been ὀψιμαθὴς also. But when we know that apart from philosophical greatness, he was the foremost man of learning of his time, and was also famous as a writer for his graces of style, we must think it unparalleled and incredible that his thirst for learning should have first arisen at thirty after a wasted youth, and that he could then have achieved attainments hardly credible as the work of a long lifetime. All we know of Aristotle from his writings or otherwise impresses us with a sense of personal superiority incompatible with these tales of his youth; not to speak of the argument that if he had squandered his property he could hardly have found means to live at Athens. Grote (cf. p. 6, n. 3, *supra*) does too much honour to Epicurus and Timæus when he treats their testimony as balancing the other. They are probably naked and baseless lies, and therefore we ought not even to infer from them with Stahr (p. 38 sq.) and Bernays (*Abh. d. Bresl. Hist.-phil. Gesellschaft*, i. 193), that Aristotle probably practised medicine in Athens while he was studying natural philosophy.

dialectician accused Aristotle of ingratitude to his master.[1] Others accuse him of annoying Plato by his showy dress, his overbearing manner, and his jeering.[2] Others relate that even in Plato's lifetime he attacked his doctrines and set up a school of his own in opposition to the Platonic,[3] and even that on one occasion he took advantage of the absence of Xenocrates to drive the aged master from his accustomed place of resort in the Academia.[4] Many, even among the ancients, re-

Neither Aristocles nor any of the trustworthy witnesses mention medical practice, and the two who do, refer to it in such a way as only to raise suspicion; while Aristotle apparently reckons himself among the 'laymen,' *μὴ τεχνῖται*, in medicine (*Divin.* 1, 463, *a.* 6).

[1] ARISTOCL. *ap.* EUS. *Pr. Ev.* xv. 2, 3: *καὶ Εὐβουλίδης δὲ προδήλως ἐν τῷ κατ' αὐτοῦ βιβλίῳ ψεύδεται . . . φάσκων . . . τελευτῶντι Πλάτωνι μὴ παραγενέσθαι τά τε βιβλία αὐτοῦ διαφθεῖραι.* Neither of the charges is important. His absence at the time of Plato's death, if that is true, may have had an easy explanation; Plato, indeed, is said to have died quite unexpectedly (cf. ZELLER, *Plato*, p. 35). The injury to Plato's books, if it means a falsification of the text, is an obvious and absurd calumny. If, as is possible, it refers to Aristotle's criticism of Plato, this, as we shall see, though it is keen and not always just, is no indication of any personal misunderstanding, since to Aristotle it meant only natural and impersonal polemics. Besides Aristocles, Diogenes (ii. 109) also rejects Eubulides' charges as a calumny.

[2] ÆLIAN, *V. H.* iii. 19, describing Aristotle's style of dress in detail.

[3] DIOG. 2: *ἀπέστη δὲ Πλάτωνος ἔτι περιόντος· ὥστε φησὶν ἐκεῖνον εἰπεῖν· Ἀριστοτέλης ἡμᾶς ἀπελάκτισε καθαπερεὶ τὰ πωλάρια γεννηθέντα τὴν μητέρα*—and so ÆLIAN, *V. H.* iv. 9, and HELLADIUS *ap.* PHOT. *Cod.* 279, p. 533, b. Similarly THEODORET, *Cur. Gr. Aff.* v. 46, p. 77, says Aristotle often attacked Plato while he was yet alive: PHILOP. *Anal. Post.* 54 a, *Schol. in Arist.* 228, p. 16, that he had especially opposed his master's Ideal Theory; and AUGUSTINE, *Civ. Dei.* viii. 12, that he had established even then a numerous school.

[4] This occurrence is related by our sole authority (ÆLIAN, *V. H.* iii. 19, cf. iv. 9) in this way: that when Plato was over eighty, and his memory was failing, Aristotle on one occasion, Xenocrates being absent and Speusippus ill, had gone with a band of his own pupils and started a debate with Plato, in which he drove the old man into a corner with such rude pertinacity that Plato withdrew himself from the halls of the Academy into his own garden, and it was

ferred to Aristotle the statement of Aristoxenus that during Plato's Sicilian journey a school was erected in opposition to his own 'by strangers.'[1] All these data, however, are very doubtful, and most of the actual statements deserve no credence.[2] If the assertion of Aristoxenus were to be understood of Aristotle it could not possibly be true, for chronological reasons in the first place,[3] but also because we possess undoubted proofs that Aristotle belonged to Plato's school long after the second Sicilian journey, and held his master in the highest honour.[4] Probably, however,

only when Xenocrates returned, three months afterwards, that he reproached Speusippus for his cowardice and forced Aristotle to restore to Plato the disputed territory.

[1] ARISTOCL. *apud* EUS. *Pr. Ev.* xv. 2, 2; τίς δ' ἂν πεισθείη τοῖς ὑπ' Ἀριστοξένου τοῦ μουσικοῦ λεγομένοις ἐν τῷ βίῳ τοῦ Πλάτωνος; ἐν γὰρ τῇ πλάνῃ καὶ τῇ ἀποδημίᾳ φησὶν ἐπανίστασθαι καὶ ἀντοικοδομεῖν αὐτῷ τινὰς περίπατον ξένους ὄντας. οἴονται οὖν ἔνιοι ταῦτα περὶ Ἀριστοτέλους λέγειν αὐτὸν, Ἀριστοξένου διὰ παντὸς εὐφημοῦντος Ἀριστοτέλην. Among the ἔνιοι was Aelian (iv. 9), who in reference no doubt to the words of Aristoxenus, says of Aristotle: ἀντῳκοδόμησεν αὐτῷ [Plato] διατριβήν. So also the *Vita Marciana*, 3; οὐκ ἄρα ἀντῳκοδόμησεν Ἀρ. σχολὴν . . . ὡς Ἀριστόξενος πρῶτος ἐσυκοφάντησε καὶ Ἀριστείδης ὕστερον ἠκολούθησεν; referring to ARISTIDES, *De quatuorv.* ii. 324 sq. (Dind.), who, however, does not refer to Aristotle by name any more than Aristoxenus, whose account he repeats and extends. For Aristides the Latin Ammonius (11) substitutes Aristocles; but the Greek Pseudo-Ammonius (p. 44 sq.) limits itself to the remark: οὐ γὰρ ἔτι ζῶντος τοῦ Πλάτωνος ἀντῳκοδόμησεν αὐτῷ τὸ Λύκειον ὁ Ἀρ., ὥς τινες ὑπολαμβάνουσι.

[2] Cf. STAHR, i. 46 sqq., not refuted by HERMANN, *Plat. Phil.* p. 81, 125.

[3] When Plato returned from his last journey Aristotle was under 24 (cf. p. 2, n. 2, *supra*, and ZELLER, *Plato*, p. 30 sq.); is it (apart from other questions) likely that he could so early head a school against a master who was then at the height of his fame?

[4] The proofs of this are:—(*a*) Aristotle published several Platonic essays (cf. *infra* and ZELLER, *Plato*, p. 26). For many reasons (especially perhaps because of their notable departure from the method of teaching laid down by Plato, cf. ZELL. *Plato*, p. 517 sq.) it is unlikely that these fall between the second and third of Plato's Sicilian

that statement did not refer to Aristotle at all.[1] Ælian's story as to driving Plato out of the Academy stands in contradiction with other and older[2] accounts which show that Plato at that time had long removed his school from the open spaces of the Gymnasium of the Academia to his own gardens. But besides, it ascribes to Aristotle a kind of behaviour which we could not believe of a man of otherwise noble character except on the most conclusive proofs: whereas here we have nothing but the testimony of a gossip-grubber, who is known to repeat without discrimination things that are palpably untrue. Against the suggestion that Aristotle had by

journeys. (*b*) The *Eudemus* of Aristotle (cf. *infra*) was written on the lines of Plato's *Phædo*, and Aristotle was probably still in the Platonic School when he wrote it, which was long after the third journey, since it is in memory of a friend who died 352 B.C. (*c*) Olympiodorus (*in Gorg*. 166, in JAHN'S *Jahrb. Supplementb*. xiv. 395, and BERGK, *Lyr. Gr*., p. 504) has preserved some verses of Aristotle's Elegy on Eudemus, which thus describe his relation to Plato:

> ἐλθὼν δ' εἰς κλεινὸν Κεκροπίης δάπεδον
> εὐσεβέως σεμνῆς φιλίης ἱδρύσατο βωμόν
> ἀνδρὸς, ὃν οὐδ' αἰνεῖν τοῖσι κακοῖσι θέμις· [Plato]
> ὃς μόνος ἢ πρῶτος θνητῶν κατέδειξεν ἐναργῶς
> οἰκείῳ τε βίῳ καὶ μεθόδοισι λόγων,
> ὡς ἀγαθός τε καὶ εὐδαίμων ἅμα γίνεται ἀνήρ.
> οὐ νῦν δ' ἔστι λαβεῖν οὐδενὶ ταῦτα ποτέ.

Buhle (*Arist. Opp*. i. 55) doubts their genuineness on grounds that are solved by our view of their application to the *Cyprian* Eudemus and *Plato*, instead of to the *Rhodian* Eudemus and *Aristotle* himself. In the corrupt last line, Bernays (*Rh. Mus. N. F.* xxxiii. 232) reads μουνάξ. He refers ἀνδρὸς, &c., to Socrates; but this seems unlikely.

[1] Aristocles (*ut supra*) says expressly that Aristoxenus always spoke well of Aristotle, against which testimony, founded on a knowledge of his book, the hint to the contrary in Suidas Ἀριστοξ. is of no weight. The word περίπατος was used of other schools besides Aristotle's; cf. Epicurus, cited p. 8, n. 3, *supra*, and the *Index Herculanensis*, 6, 5, where it is used of Speusippus, and 7, 9, of Heraclides. The τινὰς of Aristoxenus may have referred to Heraclides himself; cf. ZELLER, *Plato*, p. 30, n. As to the *Index Hercul.* see *ibid*. p. 553.

[2] In DIOG. iii. 5, 41; cf. ZELLER, *Plato*, p. 25, n.

his general behaviour incurred Plato's disapproval and had so been kept at a distance by him,[1] we could bring many statements which imply that the relation between the two philosophers was of an entirely different kind.[2] We may allow no weight, therefore, to these accounts, which in any case are insufficiently attested, and we need take no notice of sundry other stories, whose inaccuracy is apparent.[3] But we have beyond this decisive reasons which negative, not only Ælian's story and the other similar tales, but the whole theory that there was before

[1] Buhle, p. 87, sees a proof of this in the fact that Plato does not mention Aristotle, to which circumstance even Stahr, p. 58, attached some weight. But how could he name Aristotle in *Socratic* dialogues? And probably all Plato's works, except the *Laws*, were written before Aristotle came to Athens at all.

[2] PHILOPONUS, *Aetern. Mundi* vi. 27: [Ἀρ.] ὑπὸ Πλάτωνος τοσοῦτον τῆς ἀγχινοίας ἠγάσθη, ὡς νοῦς τῆς διατριβῆς ὑπ' αὐτοῦ προσαγορεύεσθαι: and *Ps. Ammon.* 44, says Plato called Aristotle's house οἶκος ἀναγνώστου: cf. also ZELLER, *Plato*, p. 559. To the same tradition belong the very doubtful story cited in ZELLER, *Plato*, p. 26, n., and the account of the altar dedicated with a laudatory inscription by Aristotle to Plato on his death (*Amm.* 46, PHILOPON. *i.q.r.*, *Schol. in Arist.* 11, b, 29), which arose, no doubt, out of a mistranslation of the Elegy to Eudemus, p. 11, n. 4, *supra*.

[3] Such is the idea mentioned by Philoponus (*ut supra*, 11, b, 23 sqq., where in l. 25, *lege* Ἀριστοτέλους) and by David (*ibid.* 20, b, 16), that Aristotle was ashamed to mount the teacher's chair while Plato lived, and that this was the origin of the name 'Peripatetic.' There is another theory (PHILOPON. *ut supra*, 35, b, 2, DAVID. *ibid.* 24, a, 6, AMMON. *ibid.* 25, b, and the *Pseudo-Ammon.* p. 47, *V. Marc.* 5, *Ammon. Latin.* 14) that the name of Peripatetics belonged originally to the Platonic school; that when Aristotle and Xenocrates took over that school after Plato's death, or rather that of Speusippus, Aristotle's followers were called Peripatetics of the Lyceum and the others Peripatetics of the Academy; and that, in the end, the one school were called Peripatetics only, and the other Academics. The origin of this theory is doubtless Antiochus, in whose name Varro in CIC. *Acad.* i. 4, 17 tells an exactly similar story: which indicates that the whole is only an invention of that Eclecticism, developed by Antiochus, which denied that there was any essential difference between Plato and Aristotle.

Plato's death any breach between him and his scholar. Authorities which are beyond any comparison with Ælian and the rest in their antiquity and credibility, assert that Aristotle remained with Plato twenty years,[1] which plainly could not be true if, although he lived for that time in Athens, he had separated himself from Plato before the end. Dionysius, indeed, expressly adds that in all this time he founded no school of his own.[2] So even in later years and in passages where he is contesting the principles of the Platonic School, Aristotle constantly reckons himself as belonging to it;[3] and he uses language as to the founder of that school and his own personal relation to him such as plainly shows how little the sentiment of respect and affection for his great master had failed in his mind,[4] even where their philosophic opposition was accentuated in the sharpest way. So also we find that he was treated as a Platonist by contemporary opponents;[5] for Cephisodorus

[1] *Vide* p. 6, n. 3, and p. 8, n. 1, *supra*.

[2] *Ep. ad Amm.* i. 7, p. 733: συνῆν Πλάτωνι καὶ διέτριψεν ἕως ἐτῶν ἑπτὰ καὶ τριάκοντα, οὔτε σχολῆς ἡγούμενος οὔτ' ἰδίαν πεποιηκὼς αἵρεσιν.

[3] Aristotle often brackets himself and the Platonists together: cf. καθ' οὓς τρόπους δείκνυμεν ὅτι ἔστι τὰ εἴδη κατὰ τὴν ὑπόληψιν καθ' ἣν εἶναί φαμεν τὰς ἰδέας, and the like, *Metaph.* i. 9, 990, b, 8, 11, 16, 23, 992, a, 11, 25, c. 8, 989, b, 18; iii. 2, 997, b, 3, c. 6, 1002, b, 14; cf. Alex. and Asclep. on 990, b, 8; and Alex. on 990, b, 16, 991, b, 3, 992, a, 10.

[4] In a well-known passage of the Ethics which itself seems to point to charges which his logical polemic against Plato had drawn down upon him, *Eth. N.* i. 4, *init.*: τὸ δὲ καθόλου βέλτιον ἴσως ἐπισκέψασθαι καὶ διαπορῆσαι πῶς λέγεται, καίπερ προσάντους τῆς τοιαύτης ζητήσεως γινομένης διὰ τὸ φίλους ἄνδρας εἰσαγαγεῖν τὰ εἴδη. δόξειε δ' ἂν ἴσως βέλτιον εἶναι καὶ δεῖν ἐπὶ σωτηρίᾳ γε τῆς ἀληθείας καὶ τὰ οἰκεῖα ἀναιρεῖν, ἄλλως τε καὶ φιλοσόφους ὄντας· ἀμφοῖν γὰρ ὄντοιν φίλοιν ὅσιον προτιμᾶν τὴν ἀλήθειαν. Cf. ZELLER, *Plato*, p. 512; cf. also ZELLER, *Ph. d. Gr.* i. p. 971, as to Aristotle's own view of his duty to a teacher.

[5] NUMEN. *apud* EUS. *Pr. Ev.* xiv. 6, 8.

the Isocratean, in a book directed against Aristotle, attacked the Platonic doctrine and particularly the 'Ideas,' and Theocritus of Chios accused Aristotle of exchanging the Academy for Macedonia.[1] Again, it is established that he stayed in Athens until Plato's death, and immediately thereafter left the city for several years, presumably for no other reason than that then for the first time the tie that bound him to the city was dissolved, because his relation to Plato was then for the first time broken. Finally, we are told[2] that Xenocrates journeyed with him to Atarneus; and it is probable from the language in which Aristotle speaks of that Academic's opinions[3] that they continued to be friends in later times. But in view of the known loyalty of Xenocrates and his unbounded reverence for Plato, it is not to be supposed that he would maintain his relations with Aristotle and keep him company on the visit to Atarneus, if the latter had separated from his master in a disrespectful way, or had, by any such rude conduct as Ælian ascribes to him, insulted the aged teacher not long before his death.

It is of course altogether probable that so independent a mind as Aristotle's would not give up its own judgment even in face of a Plato; that as time

[1] In the epigram noticed at p. 20, n. 3, *infra*: εἵλετο ναίειν ἀντ' Ἀκαδημείας Βορβόρου ἐν προχοαῖς, B. being a river near Pella.

[2] By STRABO (xiii. 1, 57, p. 610), whom we have no reason to disbelieve.

[3] Others have remarked that Aristotle almost never mentions Xenocrates, and that he avoids his name as if on purpose where he is obviously alluding to him (cf. the cases cited, ZELLER, *Plato*, p. 364, n.; and notes on p. 585, and later passages), whereas Speusippus is named in parallel cases. This probably indicates not ill-feeling, but rather a desire to avoid the appearance of personal conflict with one who was teaching beside him at Athens.

went on he began to doubt the unconditional validity of the Platonic system and to lay the foundations of his own: and that he perhaps even in these days laid bare many of the weak points of his teacher with the same uncompromising criticism which we find him using later on.[1] If a certain difference between the two men had developed out of such relations, or if Plato had not been more ready than many others since, to recognise in his scholar the man who was destined to carry forward and to correct his own work, it would be nothing wonderful. Yet that any such difference actually arose cannot be proved, and cannot even be shown to be very probable[2]: while we have patent facts to disprove the idea that Aristotle brought on any open breach by ingratitude or intentional offence. The same facts make it very improbable that Aristotle opened any philosophic school of his own during his first residence in Athens. If he had done so, his friendly relations with Plato and the Platonic circle could hardly have gone on, and it would be unintelligible that he should leave Athens exactly at the moment when the death of his great rival left the field free for himself.[3]

[1] Even in the books 'On Philosophy' (*Arist. Fragm.* 10, 11. p. 1475), apparently written before Plato's death, he had openly combated the Ideal Theory, and in the same treatise (*Fragm.* 17, 18) had maintained the eternity of the world.

[2] We have no right to ascribe to Plato and his circle of friends the later ideas of school-orthodoxy, in any such sense as to suppose that the master could not tolerate the independence of such a scholar as Aristotle. Besides, not to mention Heraclides and Eudoxus, Speusippus himself dropped the Ideal Theory.

[3] The remark of the Pseudo-Ammonius that Chabrias and Timotheus prevented Aristotle from setting up a new school against Plato is absurd. Who could hinder him, if he chose? Chabrias, moreover, died in 358 B.C.; and Timotheus was banished from Athens for life in the following year, being then a very old man.

If, then, Aristotle was connected with Plato, as one of his school, from his eighteenth to his thirty-seventh year, it follows that we cannot well over-estimate the influence of such a relation upon his course of thought. The effect of that education on Aristotle's philosophic system discloses itself at every point. The grateful scholar has himself[1] commemorated the moral greatness and lofty principles of the man 'whom the base have not even the right to praise.' But the reverence for the master would obviously not prevent Aristotle from turning his attention at the same time to all other sources which might carrry him onward and help to satisfy his insatiable thirst for knowledge. We may safely assume that he did in fact employ his long years of preparation at Athens in busy acquirement of his marvellous learning, and also that he took a keen interest in researches in natural philosophy, though Plato always treated it as of secondary importance. It is also possible that even while he was still a member of Plato's circle he may himself have lectured,[2] without thereby breaking off his relations with Plato or setting himself up against him as the leader of a competing school. We hear, for instance, that Aristotle taught Rhetoric in opposition to Isocrates;[3] but we know that the great

[1] See the lines on p.12 *supra*.

[2] STRABO (xiii. 1, 57, p. 610) says of Hermias that he heard at Athens both Plato and Aristotle.

[3] CIC. *De Orat.* iii. 35, 141: *Aristoteles, cum florere Isocratem nobilitate discipulorum videret, . . . mutavit repente totam formam prope disciplinæ suæ* [which sounds as if Aristotle had even then a school of his own, though Cicero seems to be without exact information] *versumque quendam Philoctetæ paullo secus dixit. Ille enim turpe sibi ait esse tacere, cum barbaros: hic autem, cum Isocratem pateretur dicere. Ita ornavit et illustravit doctrinam illam omnem, rerumque cognitionem cum orationis exercitatione conjunxit. Neque vero hoc fugit sapientissimum regem Phil-*

orator's relations with Plato were no longer good and that he attacked the philosophers.[1] We have distinct indications also which lead us to assign to this same period the commencement of Aristotle's activity as a writer; and the fact that in the writings of this time he imitated his master, both in matter and form,[2] shows clearly how completely he took on the impress of Plato's spirit and made the Platonic methods his own. In time, of course, and no doubt even before he left Athens, Aristotle acquired as a writer a more independent position; and it is manifest that he had in reality outgrown the position of one of Plato's pupils, long before that relation came visibly to an end by the death of the master.

*lippum, qui hunc Alexandro filio doctorem acciverit.* Again, *ibid.* 19, 62, *Arist. Isocratem ipsum lacessivit*, and *ibid.* 51, 172, *quis ... acrior Arist. fuit? quis porro Isocrati est adversatus impensius?* In *Tusc.* i. 4, 7, Cicero assumes that Aristotle attacked Isocrates in his lifetime, which would be possible only in his first residence at Athens, for when he returned in 335–4 B.C. Isocrates was many years dead. Cf. QUINTIL. iii. 1, 14: *Eoque* [*Isocrate*] *jam seniore ... pomeridianis scholis Arist. præcipere artem oratoriam cœpit, noto quidem illo, ut traditur, versu ex Philocteta frequenter usus: αἰσχρὸν σιωπᾶν Ἰσοκράτην* [δ'] *ἐᾶν λέγειν.* Diog. (3) with less probability, reads Ξενοκράτην, so misplacing the story as of the time of the founding of the Lyceum. Cicero (*Offic.* i. 1, 4) speaks clearly of contests between Aristotle and Isocrates in his life (*de Arist. et Isocrate ... quorum uterque suo studio delectatus contemsit alterum*), and Isocrates himself, *Ep.* v. *ad Alex.* 3, makes a covert attack on Aristotle, which confirms the story: *Panath.* 17 can hardly refer to Aristotle, because of the dates; cf. SPENGEL, *Abh. d. Bayer. Akad.* vi. 470 sq. Cephisodorus, a pupil of Isocrates, wrote a defence of his master against Aristotle, full of bitter abuse; *v.* DIONYS. *De Isocr.* c. 18, p. 577; ATHEN. ii. 60, d, cf. iii. 122, b; ARISTOCL. *ap.* EUS. *Pr. Ev.* xv. 24, NUMEN. *ibid.* xiv. 6, 8, THEMIST. *Or.* xxiii. 285, c. This friction did not prevent Aristotle from doing justice to his opponents: in the Rhetoric he quotes examples from no one so readily as Isocrates, and twice quotes Cephisodorus (*Rhet.* iii. 10, 1411, a, 5, 23). Cf. as to the whole subject STAHR, i. 68 sq., ii. 285 sq.

[1] SPENGEL, 'Isokr. und Platon,' *Abh. d. Münch. Akad.* vii. 731, and ZELLER, *Ph. d. Gr.* i. 416, ii. 459, n.

[2] See for proof *infra*. Of the Aristotelian writings known to us the greater part of the Dialogues and some of the rhetorical

That event opens a new chapter of Aristotle's life. So long as Plato led the Academy, Aristotle would not leave it. When Speusippus took his place,[1] Aristotle had nothing to keep him in Athens; since he does not seem to have at first contemplated the foundation of a philosophical school of his own, for which Athens would naturally have been the fittest place. Therefore he accepted, with Xenocrates, an invitation from Hermias, the lord of Atarneus and Assos,[2] who had himself at one time belonged to Plato's school.[3] The prince was the intimate friend of both,[4] and they remained three years with him.[5] Thereafter Aristotle went to Mytilene.[6] This, Strabo says, was for his own safety, because Hermias had fallen into the power of the Persians by treachery; it is probable, however, that Aristotle had left before that event.[7] After the death

texts—perhaps the Συναγωγὴ Τεχνῶν—seem to belong to the first Athenian period.

[1] This choice has caused surprise, but wrongly. It is possible that Plato had a greater personal liking for Speusippus than for Aristotle, or expected from him a more orthodox continuation of his teaching. Speusippus was a much older man, was Plato's nephew, had been brought up by him, had followed him faithfully for a long period of years, and was also the legal heir of Plato's garden near the Academy. Besides, we do not know whether Plato did himself bequeath the succession or not.

[2] BOECKH, 'Hermias,' *Abh. d. Berl. Akad.* 1853, *Hist. Phil. Kl.* p. 133 sq.

[3] STRABO, xiii. 1, 57, p. 610, APOLLODOR. *ap.* DIOG. 9, and DIONYS. *Ep. ad Amm.* i. 5, who agree that Aristotle went to Hermias after Plato's death. The opposite would not follow from the charge cited from Eubulides on p. 10, n. 1, *supra*, even if that were true. Strabo names Assos as the place where Aristotle lived during this period.

[4] Cf. p. 17, n. 2, *supra*. Aristotle's enemies (*apud* DIOG. 3, ANON. MENAG., and SUIDAS, 'Αρ.), suggest that this friendship was an immoral one, but this is impossible; BOECKH, *ibid.* 137.

[5] Apollodorus, Strabo, Dionysius, etc., *ut supra*.

[6] Ol. 108. 4 = 345–4 B.C., in the archonship of Eubulus: see Apollod. and Dionys. *ibid.*

[7] Boeckh, *ibid.* 142, refuting Strabo, has shown this to be probable, though not certain.

of Hermias the philosopher married [1] Pythias, who was either the sister or niece of his friend; [2] and of his lasting affection for them both he left more than one memorial.[3]

[1] According to ARISTOCLES (*see next note*) citing a Letter to Antipater: *τεθνεῶτος γὰρ Ἑρμείου διὰ τὴν πρὸς ἐκεῖνον εὔνοιαν ἔγημεν αὐτὴν, ἄλλως μὲν σώφρονα καὶ ἀγαθὴν οὖσαν, ἀτυχοῦσαν μέντοι διὰ τὰς καταλαβούσας συμφορὰς τὸν ἀδελφὸν αὐτῆς.* Strabo (*ut supra*) says Hermias married her to Aristotle in his lifetime, which is negatived by the Letter, if genuine. Aristocl. (*ibid.* 4, 8) says that Aristotle was accused in his lifetime of having flattered her brother to win Pythias, and also that Lyco, the Pythagorean, told a foolish story of Aristotle sacrificing to her after her death as Demeter. Diog. (v. 4) caps this by placing the sacrifice immediately after his marriage. Lucian (*Eun. c.* 9) talks of sacrificing to Hermias; cf. a like hint in ATHEN. xv. 697 a.

[2] The Anon. Menag., Suidas, s. v. Ἀρ. Ἑρμίας, and Hesych. call her his daughter, the untrustworthy Aristippus (apud DIOG. 3) his concubine. Both are disproved by the fact that Hermias was a eunuch (for the statements of Suid. Hesych. and Anon. Menag. as to this are irreconcilable with DEMETR. *De Eloc.* 293). ARISTOCLES *ap.* EUS. xv. 2, 8 sq. cites a letter of Aristotle to Antipater, and a book by Apellicon of Teos relating to Hermias and Aristotle, and says that Pythias was the sister and adopted daughter of Hermias. Strabo (xiii. 610) calls her niece, Demetr. of Magnesia (*apud* DIOG. v. 3) daughter or niece. Cf. BOECKH, *ibid.* 140. HARPOCRATION, SUID. s. v. Ἑρμίας, *Etym. M.*, and PHOT. *Lex.*, call her an adopted daughter.

[3] Diog. (6) says he had a monument (whose inscription he cites) erected to Hermias at Delphi. A contemporary lampoon on this by Theocritus of Chios (a witty rhetorician of the Isocratean school and local leader of anti-Macedonian politics) is noticed by DIOG. 11, ARISTOCL. *ut supra*, and PLUT. *De Exil.* 10, p. 603; cf. MÜLLER, *Hist. Gr.* ii. 86, and *supra*, p. 15, n. 1. Aristotle also dedicated to Hermias the poem preserved in DIOG. 7, and ATHEN. xv. 695. As to Pythias, the will directs that, as she wished, her remains should be laid beside his own; as no other burial-place is named, she was probably first buried at Athens, and died, therefore, after Ol. 111, 2, but not very long before Aristotle's death, since the Pythias who was then not marriageable was her daughter (cf. ARISTOCL., SUIDAS and the ANON. MENAG.). After her death Aristotle 'married' (ἔγημε) a certain Herpyllis of Stagira, who bore him a son Nicomachus (ARISTOCL. cf. DIOG. 14); and though their union was apparently irregular (*v.* Timæus ap. Schol. in HES. Ἔ. κ. Ἡ. v. 375; DIOG. v. 1. *ap.* MÜLLER, *Fragm. Hist. Gr.* i. 211; ATHEN. xiii. 589 c, citing Hermippus and call-

In the year 343 or 342 B.C. (Olymp. 109, 2),[1] Aristotle accepted a call to the Macedonian Court[2] to take charge of the education of the young Alexander, then thirteen years old,[3] which before that had not been in the best hands.[4] The invitation probably found him in Mytilene.[5] We have no reliable testimony as to the special reasons which led Philip to think of Aristotle.[6] Most unfortunately, we are almost entirely

ing her a ἑταίρα; SUIDAS and the ANON. MENAG.), yet he must have treated her as his wife, and his will speaks of her with honour, provides for her, and begs his friends ἐπιμελεῖσθαι ... μνησθέντας ἐμοῦ, καὶ Ἑρπυλλίδος, ὅτι σπουδαία περὶ ἐμὲ ἐγένετο, τῶν τε ἄλλων καὶ ἐὰν βούληται ἄνδρα λαμβάνειν, ὅπως μὴ ἀναξίῳ ἡμῶν δοθῇ (DIOG. 13).—As to Aristotle's daughter we know from Sext. Math. (i. 258), the Anon. Menag. and Suidas *s. v.* Ἀρ., that after Nicanor she had two husbands, Procles of Sparta, and Metrodorus the physician; by the former she had two sons who were scholars under Theophrastus, by the latter a son, Aristoteles, who was commended (being then probably young) by Theophrastus to his friends in his will. Nicomachus was brought up by Theophrastus, but died in youth (μειρακίσκος) in battle (Aristocl. *ap.* EUS. xv. 2, 10; DIOG. v. 29; SUIDAS *s. v.* Θεόφρ. and Νικόμ., confirmed by the terms of Theophrastus' will, *apud* DIOG. v. 51). The six books of *Ethics* and the work on his father's *Physics*, ascribed to him by Suidas, are therefore very doubtful.

[1] This date is given by APOLLOD. ap. DIOG. 10, and DIONYS. *ut supra*. The Schol. in Arist. 23 b, 47, says Aristotle was at Alexander's Court at Plato's death, but this is obviously wrong.

[2] Cf. GEIER, *Alexander und Arist.* (Halle, 1856).

[3] Diog. says fifteen, which must be an oversight, for Apollodorus cannot be wrong in such a date (cf. STAHR, p. 85).

[4] PLUT. *Alex.* c. v.; QUINTIL. i. 1, 9.

[5] Stahr (p. 84, 105, A. 2) is not averse to the view that Aristotle first went back from Mytilene to Athens, but none of our biographers know anything of it. On the contrary, DIONYS., *ut supra*, expressly says he went from Mytilene to Philip. Aristotle in a fragment of a letter ap. DEMETR. *De Eloc.* 29, 154, says: ἐγὼ ἐκ μὲν Ἀθηνῶν εἰς Στάγειρα ἦλθον διὰ τὸν βασιλέα τὸν μέγαν ἐκ δὲ Σταγείρων εἰς Ἀθήνας διὰ τὸν χειμῶνα τὸν μέγαν, but this jocular expression, even if the letter is genuine, proves nothing, as it is clearly meant, not as an exact historical statement, but as a rhetorical antithesis between the *termini* of his journeys, leaving out the intermediate points.

[6] According to a well-known story, Philip had told Aristotle,

without information as to the kind of education he gave the young and ambitious prince, and the influence he had upon him.[1] But we should be forced to assume that

before Alexander's birth, that he hoped he would make a great man of him (*v.* the letter *ap.* GELL. ix. 3), but the letter is certainly spurious, for Philip could not have written in these extravagant terms to a young man of 27, who had had no chance to distinguish himself; and, again, if he had destined him to be his son's instructor from birth, he would have brought him to Macedonia before Ol. 109, 2. But the prince, who was deeply interested in science and art, and no doubt well informed of what was going on in Athens, may have taken notice of Aristotle after he had become one of the most distinguished of Plato's school, though little weight attaches to Cicero's statement to that effect (*De Orat.* iii. 35, 141). It is also possible that through his father, Aristotle had relations with the Macedonian court, and he may himself, as Stahr (p. 33) suggests, have been acquainted in his youth with Philip, who was the youngest son of Amyntas and about his own age.

[1] There was a work, or perhaps a section of a larger work, 'On the Education of Alexander,' by the Macedonian historian Marsyas (SUID. s. v. Μαρσ.; cf. MÜLLER, *Script. Alex. M.* 40, and GEIER, *Alex. Hist. Script.* 320 sq.). Onesicritus had treated of it also in a chapter of his *Memorabilia* (GEIER, *ibid.* 77; DIOG. vi. 84). Yet the accounts we have of it are very scanty, and it is not certain that any are trustworthy. Plutarch (*Alex.* c. 7 sq.) praises Alexander's thirst for knowledge, his delight in books and learned conversation, and his passion for the poets and historians of his people. He assumes that he was instructed by Aristotle, not only in ethics and politics, but in the deeper secrets of his system, basing this on the well-known letter (*q. v. ap.* GELL. xx. 5, quoting Andronicus, and *ap.* SIMPL. *Phys.* 2 b), in which Alexander chides Aristotle for publishing his acroamatic doctrines, and Aristotle replies that those who had not *heard* them would not understand them. Plutarch also connects Alexander's fancy for medicine, which he sometimes tried personally on his friends, with Aristotle's teaching. These are, however, more or less probable guesses, and what appears most important is least trustworthy, for the letters turn on the theory of an acroamatic and esoteric teaching confined to a few, as to the incorrectness of which *v.* p. 112, *inf.* We hear of two books which Aristotle addressed to his pupil, Περὶ βασιλείας, and Ὑπὲρ Ἀποίκων, *d.q.v.* p. 60, n. 1 *inf.* Plut. (*Alex.* 8) says Aristotle revised the text of the *Iliad* for Alexander. As fellow-pupils of Alexander are named Marsyas (SUID. Μαρσ.), Callisthenes (JUSTIN. xii. 6; cf. PLUT. *Alex.* 55; DIOG. v. 4; ARRIAN. iv. 10; but *vide* GEIER, *Alex. Script.* 192 sq.), and perhaps Cassander (PLUT. *Alex.* 74). At

that influence was important and beneficial, even if we had less distinct testimony as to the respect of the great pupil for his teacher, and as to the love of learning which the philosopher imparted to the king.[1] Alexander was not only the invincible conqueror, but also a far-seeing ruler, ripe beyond his years. He was ambitious to establish the supremacy, not of Grecian arms only, but also of the Hellenic culture. He withstood for years the greatest temptations to overweening pride to which any man could be exposed. In spite of his later errors, he still stands far above all other world-conquerors in nobility of spirit, in purity of morals, in love of humanity, and in personal culture. And for all this the world has in no small degree to thank the tutor who formed his apt intelligence by scientific training and fortified by sound principles his natural instinct for all that was great and noble.[2] Aristotle himself appears to have made a kindly use of the influence which his position gave him, for we hear that he interceded with the king for individuals and even for whole cities.[3]

the same time Alexander met Theodectes (PLUT. *Alex.* 17), and probably also Theophrastus (*d. q. vide* ÆLIAN. *V. H.* iv. 19). DIOG. v. 39, but cf. 52. The fabulous stories as to Alexander's youth, preserved by the pseudo-Callisthenes, may be ignored.

[1] PLUT. *Alex.* 8: Ἀριστοτέλη δὲ θαυμάζων ἐν ἀρχῇ καὶ ἀγαπῶν οὐχ ἧττον, ὡς αὐτὸς ἔλεγε, τοῦ πατρὸς, ὡς δι' ἐκεῖνον μὲν ζῶν, διὰ τοῦτον δὲ καλῶς ζῶν, ὕστερον δὲ ὑποπτότερον ἔσχεν [*v. infra*], οὐχ ὥστε ποιῆσαί τι κακὸν, ἀλλ' αἱ φιλοφροσύναι τὸ σφοδρὸν ἐκεῖνο καὶ στερκτικὸν οὐκ ἔχουσαι πρὸς αὐτὸν ἀλλοτριότητος ἐγένοντο τεκμήριον. ὁ μέντοι πρὸς φιλοσοφίαν ἐμπεφυκὼς καὶ συντεθραμμένος ἀπ' ἀρχῆς αὐτῷ ζῆλος καὶ πόθος οὐκ ἐξερρύη τῆς ψυχῆς, as his relation to Anaxarchus, Xenocrates, and the Indian philosophers Dandamis and Kalanus showed (notwithstanding THEMIST. *Or.* viii. 106, D.).

[2] That he did not act in practice on Aristotelian principles (PLUT. *Virt. Alex.* i. 6, p. 329; cf. STAHR, p. 99, 2; DROYSEN, *Gesch. d. Hellen.* i. b, 12 sq.) proves nothing to the contrary.

[3] *Ps. Amm.* 46, *V. Marc.* 4, *Amm. lat.* 13, ÆLIAN, *V. H.* xii. 54.

Of the latter we are told that Stagira (whose refoundation he procured from Philip[1]), Eresus,[2] and Athens,[3] had at different times to thank him for his advocacy.

When Alexander, at the age of sixteen, was appointed Regent by his father,[4] Aristotle's teaching must naturally have come to an end. It cannot afterwards have been resumed in any regular way, for in the immediately following years the precocious prince took a most active

[1] So PLUT. *Alex.* c. 7, cf. *Adv. Col.* 33, 3, p. 1126, and DIO. CHRYSOST. *Or.* 2 *fin*, *Or.* 47, 224 R. On the other hand, DIOG. 4, *Ps. Ammon.* 47, *V. Marc.* 4, *Ammon. Latin.* 13, PLIN. *H. Nat.* vii. 29, 109, ÆLIAN. *V. H.* iii. 17, xii. 54, VALER. MAX. v. 6, ascribe the restoration of Stagira to Alexander. Plutarch, however, seems on the whole better informed, and is confirmed by the expressions of Aristotle and Theophrastus themselves; cf. p. 25, n. 2, *infra*. Plut. (*Adv. Col.* 32, 9) and Diog. (4) say that Aristotle also framed laws for the restored city, which is hardly credible. DION (*Or.* 47) relates that he had to contend with great difficulties in the restoration, of which he complains in a letter, which may or may not be genuine. His work did not last long, for Dion (*ibid.*) and Strabo (vii. fr. 35) describe Stagira as uninhabited: that it succeeded for the time is clear from p. 25, n. 2, & p. 37, n. 3 & 4.

[2] A doubtful story in *Ps. Amm.* p. 47, and in *V. Marc.* and *Ammon. Latin.* represents Aristotle as saving Eresus from destruction by Alexander.

[3] *V. Marc.* 4 and *Ammon. Latin.* (13) refer to the service that Aristotle did the Athenians in his letter to Philip, and add that a monument was erected to him in consequence on the Acropolis. The story may be suspected of resting on a spurious letter; yet DIOG. (6) also says: *φησὶ δὲ καὶ Ἕρμιππος ἐν τοῖς βίοις, ὅτι πρεσβεύοντος αὐτοῦ πρὸς Φίλιππον ὑπὲρ Ἀθηναίων σχολάρχης ἐγένετο τῆς ἐν Ἀκαδημίᾳ σχολῆς Ξενοκράτης· ἐλθόντα δὴ αὐτὸν καὶ θεασάμενον ὑπ' ἄλλῳ τὴν σχολὴν ἑλέσθαι περίπατον τὸν ἐν Λυκείῳ.* This cannot be true as stated, for at Speusippus' death, 339 B.C., Aristotle had long been Alexander's tutor, and at that date there could be no question of embassies to Macedonia. Stahr's theory (p. 67, 72) of an embassy in Aristotle's first residence at Athens is untenable. The story may relate to the two years between the battle of Chæronea and Philip's murder, when Aristotle, already influential at the Macedonian Court, might by his intercession have done some service to Athens which Hermippus could describe by some such term as *πρεσβεύειν.* The favour Alexander showed to the Athenians may have been partly due to Aristotle's influence (PLUT. *Alex.* c. 13, 16, 28, 60).

[4] Ol. 110. 1, = 340 B.C., the year of Philip's campaign against Byzantium. (DIOD. xvi. 77; PLUT. *Alex.* 9.)

part in his father's decisive campaigns: though that circumstance does not exclude the possibility of some continuance of their intellectual pursuits in the intervals of leisure.[1] Aristotle seems at this time to have withdrawn to the city of his birth.[2] At an earlier period he and his pupil had already left Pella.[3] After Alexander ascended the throne, Aristotle must still have remained some time in the north. But with the beginning of the great war with Persia, the reasons that had bound him to Macedonia came to an end, and there was no longer anything to keep him away from that city, which offered at once the most congenial residence[4] and the best field for his teaching work.[5]

[1] During this period Aristotle might or might not be called Alexander's tutor; which accounts probably for the different stories as to the length of his tutorship, given by Dionys. as eight years (his whole residence in Macedonia), and by Justin (xii. 7) as five years, which is itself too long.

[2] That the last period before his return to Athens was spent in Stagira, where his family house was (cf. p. 3, n. 2), is assumed in the fragment quoted p. 21, n. 5, the genuineness of which is not beyond doubt. He must have treated Stagira as his home, since in his will (DIOG. 16) he orders the votive offering for Nicomachus to be erected there. His second wife was of Stagira (*v.* p. 20, n. 3), and Theophrastus owned land in the city (DIOG. v. 52), with which he shows himself to be well acquainted. Cf. *Hist. Plant.* iii. 11, 1; iv. 16, 3.

[3] PLUT. (*Alex.* c. 7) says he and Alexander lived at the Nymphæum, near Mieza. Stahr (104) takes this to be near Stagira, but Geier (*Alexander und Aristot.* 33) shows it to be S.W. of Pella, in Emathia.

[4] The fragment quoted p. 21, n. 5, says it was the Thracian winter that drove him from Stagira, but this could scarcely be the chief reason.

[5] The *Ps. Ammon.* 47, says Aristotle was, after Speusippus' death, called to Athens by the Athenians, or, according to *V. Marc.* 5, by the Platonic school, the leadership of which he took over in common with Xenocrates (cf. p. 13, n. 3). The three recensions of this biography, however, contain at this point a chaos of fables. The *Ps. Ammon.* says Aristotle taught after this call in the Lyceum, had afterwards to fly to Chalcis, went thence again to Macedonia, accompanied Alexander on his Indian expedition, collected in his travels his 255 forms of government, returned after Alexander's

He returned to Athens[1] in Olymp. 111. 2 (B.C. 335–4) thirteen years after Plato's death. The time thus left for his work in that city was but twelve years,[2] but what he accomplished in that short interval borders on the incredible. Even if we may assume that he had already in great part completed the preparatory work for his philosophy, and that the researches in natural philosophy and the historical collections which supplied the materials for his theoretic labours had perhaps been brought to some kind of conclusion before his return to Athens, it seems certain that almost all his systematic treatises belong entirely to this last period of his life.

death to his native town, and died there twenty-three years after Plato. The *Latin. Ammon.* (14, 17) and the *Vita Marciana* (5, 8) send him with Alexander to Persia collecting his 255 polities, and returning home after the war, and after all this they make him start teaching in the Lyceum, fly to Chalcis and die there, twenty-three years after Plato. The collection of polities in Alexander's campaigns is noticed also by AMMON. *Categ.* 5, b; DAVID, *Schol. in An.* 24, *a*, 34; PS.-PORPH. *ibid.* 9, b, 26; Anon. *ad Porph.* apud ROSE, *Ar. pseud.* 393. To seek any grains of truth in this confusion would be lost time.

[1] APOLLOD. *apud* DIOG. 10, and DIONYS. *ut sup.*, both agree in naming Ol. 111, 2, but do not indicate whether Aristotle came in the first or second half of the year, *i.e.* end of 335 or spring of 334. For the latter it may be argued that the hostility of Athens to Alexander was only terminated and the Macedonian influence restored after the destruction of Thebes in the summer of 335, and that Alexander did not start on his march into Asia till the spring of 334. For the other view the calculation of Dionys. (*see next note*) may be quoted, but it is probable that this is merely his own deduction from the years given by Apollod.—Ol. 111, 2, for the arrival in Athens; Ol. 114, 3, for his death; therefore, Ol. 114, 2, for the flight to Chalcis.

[2] DIONYS. *ut supra*: ἐσχόλαζεν ἐν Λυκείῳ χρόνον ἐτῶν δώδεκα· τῷ δὲ τρισκαιδεκάτῳ, μετὰ τὴν Ἀλεξάνδρου τελευτὴν, ἐπὶ Κεφισοδώρου ἄρχοντος, ἀπᾳρας εἰς Χαλκίδα νόσῳ τελευτᾷ. As Alexander died June 323, and Aristotle in autumn 322 (cf. p. 37), this reckoning will be exact if Aristotle came to Athens in the autumn of 335 and left in the autumn of 323. It would also coincide if Aristotle went to Athens in spring 334 and to Chalcis in summer 322, which, however, is otherwise unlikely, as is shown at p. 36, n. 1, *infra*.

Parallel with this comprehensive and strenuous labour as a writer went on his work as a teacher, since he now at last began to compete with his great master on a footing of equality as the founder of a new school. The open spaces of the Lyceum were the resort that he chose for his hearers.[1] He was wont to converse with his scholars as he walked up and down in that gymnasium between the rows of trees; and from this custom his school derived the name of the 'Peripatetics.'[2] For a more numerous audience, however, he would naturally have to adopt a different form of teaching.[3] Therefore,

[1] It was a gymnasium connected with a temple of Apollo Lykeios, and lay in one of the suburbs (cf. SUID. HARPOCRATION, and *Schol. in Aristoph. Pac.* v. 352.

[2] HERMIPPUS *ap.* DIOG. 2, etc.; CIC. *Acad.* i. 4, 17; GELL. *N. A.* xx. 5, 5; DIOG. i. 17; GALEN. *H. phil.* c. 3; PHILOP. *in q. v. Schol. in Ar.* ii. b, 23 (cf. *in Categ. Schol.* 35, a, 41 sq.; AMMON. *in q. v. Porph.* 25, 6; DAVID, *in Categ.* 23, b, 42 sq., and p.13, n.3 *supra*); with DAVID, *Schol. in Ar.* 20, b, 16; SIMPL. *in Categ.* 1 *fin.* That this derivation is correct rather than the opposite view of Suidas (s. v. Ἀρ. and Σωκράτης) and Hesych., which derives the name from the Περίπατος of the Lyceum as the meeting-place of the school is proved, first, by the form of the word, which can be derived only from the verb, and also by the fact that the word Περίπατος in the earliest times was not confined to the Aristotelians (v. p. 13, n. 3); though later it was so limited, and they were called *οἱ ἐκ* (or *ἀπὸ*) *τοῦ περιπάτου* (or *οἱ ἐκ τῶν περιπάτων*, STRABO, xiii. 1, 54), as the other schools were called *οἱ ἀπὸ τῆς Ἀκαδημίας*, or *οἱ ἀπὸ τῆς στοᾶς* (*v.* SEXT. Pyrrh. iii. 181; Math. vii. 331, 369; xi. 45, etc.).

[3] GELL. *ut supra*, says that Aristotle gave two kinds of instruction: the exoteric and the acroamatic. The former related to Rhetoric, and the latter to '*Philosophia remotior*' (= Metaphysics) with Physics and Dialectic. The acroamatic instruction, which was intended only for those who were tried and well prepared, occupied the morning; the exoteric lectures, to which the public was admitted, the afternoon (cf. QUINTIL. iii. 1, 14, *pomeridianis scholis Ar. præcipere artem oratoriam cœpit*). The former was called the ἑωθινὸς, the latter the δειλινὸς περίπατος: *utroque enim tempore ambulans disserebat.* It is impossible, however, to address a large audience walking; therefore

as had already happened more or less with Plato, the Socratic fashion of the dialogue had to give place to that of a continuous lecture, whenever he was dealing either with a large number of scholars or with subjects in which there was something essentially new in form and matter to be explained or some inquiry to be carried through with scientific accuracy of detail.[1] On the other hand, wherever these difficulties did not arise, he did no doubt retain the habit of philosophic dialogue with his friends as an alternative method.[2] In addition to his philosophical teaching he appears also to have revived his earlier school of Rhetoric,[3] in connection with which there were exercises in oratory.[4] It is this, and not

Diog. (3) is doubtless more correct, ἐπειδὴ δὲ πλείους ἐγένοντο ἤδη καὶ ἐκάθισεν.

[1] Such lectures must be meant when ARISTOX. (*Harm. elem.* p. 30) says that Aristotle in his teaching indicated the objects and method of his inquiry before giving the development of individual points. It is, as will be seen, probable as to many of the Aristotelian writings that they were either made up from notes of lectures, or intended as preparatory notes for lectures; and at the end of the *Topica* Aristotle directly addresses his audience (*Soph. El.* 34 *fin.*).

[2] This appears partly from the nature of the case, since Aristotle had among his hearers ripe and notable men like Theophrastus; partly from the fact that at least in earlier years he used the form of dialogue even in his writings; partly from the fashion of peripatetic teaching, which supposes conversation: cf. DIOG. iv. 10, speaking of Polemo: ἀλλὰ μὴν οὐδὲ καθίζων ἔλεγε πρὸς τὰς θέσεις, φασί, περιπατῶν δὲ ἐπεχείρει. The continuous lecture on a definite theme is expressed by πρὸς θέσιν λέγειν: a more cursory treatment by ἐπιχείρειν (cf. following notes).

[3] Diog. (3) is not a good witness, since what he appears to state of Aristotle's later time seems to be taken from a source relating to the earlier period of contest with Isocrates (cf. p. 17, n. 3). It is probable, however, from Aristotle's *Rhetoric* itself that in the oral philosophic teaching rhetoric was not forgotten, and GELL., *ut supra*, speaks expressly of rhetorical teaching in the Lyceum.

[4] DIOG. 3: καὶ πρὸς θέσιν συνεγύμναζε τοὺς μαθητὰς ἅμα καὶ ῥητορικῶς ἐπασκῶν, the θέσις being a general topic, not a particular question (cf. CIC. *Top.* 21, 79, *Ep. ad Att.* ix. 4; QUINTIL. iii. 5. 5, x. 5. 11; and FREI, *Quæst.*

any popular lectures addressed to large audiences, that is referred to in the story that he received in the morning a small and select circle only and in the afternoon everyone freely.[1] At the same time we must also think of the Aristotelian school as a society of friends having on many sides a common life. For friendship its founder, bred in the intimacy of Plato, always showed by word and act a tender and beautiful enthusiasm; and we hear accordingly that, following the fashion of the Academy, he was wont to gather his scholars about him at common meals and that he introduced a plan of definite regulations for these meetings and for the whole of their common life.[2]

It is said that the aid and appliances which Aristotle needed for his far-reaching labours were provided for him by the favour of the two Macedonian rulers, and especially by the princely generosity of Alexander.[3]

*Prot.* 150). CIC. *Orat.* 14, 46: *In hac Ar. adolescentes, non ad philosophorum morem tenuiter disserendi, sed ad copiam rhetorum in utramque partem, ut ornatius et uberius dici posset, exercuit.* Neither says whether the earlier or the later school of rhetoric is meant: probably both; cf. GELL. *ibid.* ἐξωτερικὰ *dicebantur, quæ ad rhetoricas meditationes facultatemque argutiarum civiliumque rerum notitiam conducebant... illas vero exotericas auditiones exercitiumque dicendi.*

[1] Cf. p. 27, n. 3, and GELL. *ibid.*

[2] ATHEN. (i. 3, v. 186 b, cf. 186 e) says he wrote for their common meals νόμοι συμποτικοί, which may refer, however, to the work mentioned p. 99, n. 1, *infra*; and Diog. (4) preserves a hint of his arrangement for the internal government of the school by officers changing every ten days. Cf. ZELLER, *Ph. d. Gr.* i. 839, n. 1.

[3] According to ÆLIAN (*V. H.* iv. 19), Philip gave him ample means to pursue his investigations, πλοῦτον ἀνενδεῆ, especially in Natural History; ATHEN. (ix. 398) speaks of Alexander devoting 800 talents to that work; and PLIN. (*H. Nat.* viii. 16, 44) says Alex. placed under his orders all the hunters, fishers, and fowlers of the kingdom, and all overseers of the royal forests, ponds, and live stock, numbering many thousands. Pliny's story,

However exaggerated the stories of the ancient writers on this subject may seem to be, and however wealthy we may fairly suppose Aristotle himself to have been by inheritance,[1] it is yet clear that the vast scope of his researches forces us to infer that he possessed advantages which he probably could not have commanded but for such kingly assistance. The deep and wide acquaintance with the writings of his people which his own works[2] disclose to us could hardly be possible without the possession of books; and on this head we are expressly told that he was the first who accumulated a great library.[3] Such works, again, as the *Politeiai* and the collection of foreign laws could not be produced without laborious and no doubt costly investigations. The books on Natural History especially and the kindred treatises presuppose researches such as no one could have brought to completion unless he had at his disposal or could set in action something more than the resources of a private individual. It was therefore a happy circumstance that the man whose grasp of mind and rare powers of ob-

however, is disproved (*v.* BRANDIS, p. 117 sq., and HUMBOLDT, *Kosm.* ii. 191, 427) by the fact that with a few exceptions, such as elephants, Aristotle shows no knowledge of things which would be discovered in Alexander's expedition.

[1] His will proves nothing as to his earlier years, but apart from the calumnies of his opponents, as to his pride and love of display, all we know of his way of life, his choice of residence, his marriage, and the means necessary for his extensive studies, implies that he was not hampered by poverty. As to the worthlessness of the tales of Epicurus and Timæus, cf. p. 9, n. 1 and 3.

[2] Besides the extant works, we know of others concerning Rhetoric, Poetry, and the History of Philosophy.

[3] STRABO, xiii. 1, 54, p. 608: *πρῶτος ὧν ἴσμεν συναγαγὼν βιβλία καὶ διδάξας τοὺς ἐν Αἰγύπτῳ βασιλέας βιβλιοθήκης σύνταξιν.* Cf. ATHEN. i. 3, a. GELL. (iii. 17, 3) says Aristotle paid three Attic talents for the works of Speusippus.

servation marked him as the ablest founder of empirical science and of systematic learning, should have been so favoured by fortune that the needful equipment for his great calling was not denied him.

In the last years of Aristotle's life the good relations between him and his great pupil were disturbed.[1] The philosopher may well have taken offence at many of the things which Alexander did in the intoxication of success, at many measures which he found necessary for the consolidation of his conquests, but which were repugnant to the Hellenic traditions and to the self-respect of independent Greeks, and at the harsh and passionate excess into which the young conqueror was betrayed when he was surrounded by flatterers, embittered by personal opposition and made suspicious by treachery.[2] There would be no lack of tale-bearers to carry gossip true and false to the king, for the learned and philosophic members of his Court were plotting in their personal jealousies[3] to oust each other, and even the courtiers and generals doubtless sought to use the scientific proclivities of the prince as points in the game of their ambitions. As the king's relations with Antipater grew more unfriendly, it seems he was prejudiced against Aristotle[4] also, because of the close relations between the philosopher and the general.[5] But the severest blow to the

[1] Cf. p. 23, n. 1, *supra*. The exchange of letters which is cited as a proof of their friendship is unreliable, because we do not know how much is genuine.

[2] Plutarch (cf. p. 23, n. 2, *supra*) says Aristotle was dissatisfied with Alexander's whole political idea of the fusion of the Greeks and Orientals.

[3] For examples *v.* PLUT. *Alex.* c. 52, 53, ARRIAN, iv 9–11.

[4] Cf. PLUT. *ibid.* 74 (though that is after the death of Callisthenes); as to Antipater, cf. PLUT. *Alex.* 39, 49; ARRIAN, vii. 12; CURT. x. 31; DIODOR. xvii 118.

[5] This friendship is proved from the fact that Antipater's

king's attachment to his tutor came through the action of Callisthenes.[1] The stiff-necked opposition of that philosopher to the new Oriental fashions of the Court; the bitter and reckless tone of his diatribes against them; the pointed way in which he vaunted his independence and drew upon himself the eyes of all the malcontents of the army; the importance he assumed to himself as Alexander's historian, and the arrogant airs he gave himself accordingly, had long caused the king to look on him with anger and mistrust. This made it the easier for his enemies to persuade the king of his complicity in the conspiracy of the nobles which had placed Alexander's life in the gravest danger, and Callisthenes lost his life[2] with the conspirators, though he was doubtless innocent of their treacherous design. In the heat of his anger the king's suspicions turned against Aristotle[3] also, for he had brought up Calli-

son, Cassander, was a pupil of Aristotle (PLUT. *Alex.* 74), by the letters of Aristotle to Antipater (Aristocl. *apud* EUS. *Pr. Ev.* xv. 2, 9; DIOG. 27; DEMETR. *Eloc.* 225; ÆLIAN, *V. H.* xiv. 1), and especially by the fact that Antipater is named as chief executor in Aristotle's will, *apud* DIOG. 11. The false story of his complicity in Alexander's death is based on this circumstance (*v. infra*).

[1] As to Callisthenes, see PLUT. *Alex.* 53–55; *Sto. rep.* 20, 6. p. 1043, *Qu. conv.* i. 6. p. 623; ARRIAN, iv. 10–14; CURT. viii. 18 sq.; CHARES *apud* ATHEN. x. 434 d; THEOPHRAST. *ap.* CIC. *Tusc.* iii. 10, 21; SENECA, *Nat. Qu.* vi. 23, 2; and of modern writers, STAHR, *Arist.* i. 121 sq.; DROYSEN, *Gesch. Alex.* ii. 88 sq.; GROTE, *Hist. of Greece,* xii. 290 sq., etc.

[2] It is highly improbable he was an accomplice, though we cannot say how far he was to blame for exciting by reckless talk his younger friends.

[3] Alex. writes to Antipater (PLUT. *Alex.* 55): οἱ μὲν παῖδες ὑπὸ τῶν Μακεδόνων κατελεύσθησαν· τὸν δὲ σοφιστὴν [Callisth.] ἐγὼ κολάσω καὶ τοὺς ἐκπέμψαντας αὐτὸν καὶ τοὺς ὑποδεχομένους ταῖς πόλεσι τοὺς ἐμοὶ ἐπιβουλεύοντας. According to Chares (*ap.* PLUT. *ibid.*), he had at first intended to try Callisthenes in Aristotle's pres-

sthenes as a kinsman and had afterwards recommended him to the King,[1] though, no doubt, he also warned the reckless young man against imprudence.[2] The suspicion however led to nothing worse than a notable coolness in his relations with Alexander.[3] A story to the effect that Aristotle was concerned with Antipater in the alleged poisoning of Alexander was connected with the death of Callisthenes,[4] but the completely groundless nature of the charge has long ago been proved.[5] So far indeed was Aristotle from having any cause to desire his princely pupil's death that that event in reality brought serious dangers upon himself.

ence. The statement of Dio. Chrys. (*Or.* 64, p. 338) that Alexander meant to kill Aristotle and Antipater is merely a rhetorical exaggeration.

[1] PLUT. *ibid.*; ARRIAN, iv. 10, 1; DIOG. 4; SUID. Καλλισθ.

[2] DIOG. *ibid.*; VALER. MAX. vii. 2; PLUT. *Alex.* 54.

[3] Plutarch says this expressly (cf. p. 23, n. 1, *supra*), and the story in Diog. 10, that Alexander, to mortify his teacher, took Anaximenes of Lampsacus and Xenocrates into favour, would not prove the contrary even if it were more credible; but it is unworthy of both Alexander and Aristotle. Plutarch, *ibid.*, on the contrary, sees in the king's kindness to Xenocrates, a consequence of Aristotle's teaching. Philoponus (*apud* ARIST. *Meteorol.* ed. Ideler, i. 142) cites a reputed letter of Alexander to Aristotle from India, which proves nothing.

[4] The earliest witness to this story is a certain Hagnothemis (*apud* PLUT. *Alex.* 77) who is said to have heard it from King Antigonus I. Arrian (vii. 27) and Pliny (*H. Nat.* xxx. 16) mention it, but, like Plutarch, treat it as an invention. Xiphilinus (lxxvii. 7, p. 1293) says the Emperor Caracalla deprived the Peripatetics in Alexandria of their privileges on account of the alleged guilt of Aristotle.

[5] The disproof of the charge (cf. STAHR, *Ar.* i. 136 sq. and DROYSEN, *Gesch. d. Hellen.* i. 705 sq,) rests, apart from its moral impossibility, on these grounds: (*a*) Plut. *ibid.* shows expressly that the suspicion of poisoning first arose six years after Alexander's death, when it afforded the passionate Olympias a welcome pretext to slake her hatred against Antipater's family, and to excite public opinion against Cassander who was said to have administered the poison; (*b*) equal suspicion attaches to the testimony of Antigonus, which must belong to the time when he was at enmity with Cassander, though we do not know whether he made any charge against

For the unexpected news of the sudden death of the dreaded conqueror called out in Athens a wild excitement against the Macedonian rule, which, as soon as the news was fully confirmed, broke into open war. Athens put herself at the head of all who were willing to fight for the freedom of Greece, and before the Macedonian regent Antipater was fully prepared, he found himself beset by superior forces, which he only succeeded in mastering after a long and risky struggle in the Lamian War.[1] From the first this movement threatened, as was to be expected, the prominent members of the Macedonian party. Aristotle

Aristotle; (*c*) it is significant that the bitterest opponents of Aristotle, to whom no calumny is amiss, such as Epicurus, Timæus, Demochares, Lyco, etc., know nothing of the charge; (*d*) almost all who speak of Alexander's poisoning preserve the story (which was clearly connected with the first publication of the rumour and was well fitted to catch the popular fancy) that it was accomplished by water from the Nonacrian spring—*i.e.* the Styx—a proof that we are not dealing with history; (*e*) the accounts Arrian and Plutarch give us from the court chronicles as to the course of Alexander's illness do not in any way suggest poison; (*f*) if Aristotle's motive was the fate of Callisthenes, that could hardly have caused in him a hatred that would lead six years later to murder, nor could he, after so long a time, have had any fear as to his own safety; (*g*) it is probable that Aristotle's own adopted son was in Alexander's service, and intrusted with important missions (cf. p. 5, n. 7, *supra*); (*h*) finally, the rumour of Alexander's poisoning is refuted by the movement of events afterwards. Alexander's death was the signal for an outbreak in Greece, which in the Lamian war brought Antipater himself to great straits. Anyone acquainted with the politics of the day would clearly foresee such a result. If Antipater were not as much taken by surprise as everyone else was by the king's death, he would have made preparations either to stem or to head the rising. If he had been known as the author of that which the Greeks acclaimed as the beginning of freedom, they would not have begun their revolt by attacking him; and if any part in it had been attributed to Aristotle, he would not have had to fly from Athens.

[1] For details, see DROYSEN, *Gesch. d. Hellen.* i. 59 sq.

may not have played a political *rôle*;[1] but, in any case, his relation as tutor to Alexander and his friendship with Antipater were so well known, his own name was so famous, and his personal enemies, no doubt, so many, that he could not escape attack. The charge brought against him of offences against the established religion —in itself baseless enough—must have been simply a pretext for wreaking political and personal vengeance.[2] But Aristotle found it best to retire before the rising storm.[3] He escaped to Chalcis in Eu-

[1] According to Aristocl. *ap.* EUS. *Pr. Ev.* xv. 2, 3, Demochares (doubtless Demosthenes' nephew, *de quo cf.* CIC. *Brut.* 83, 286: *De Orat.* ii. 23, 95; SENECA, *De Ira*, iii. 23, 2; PLUT. *Demosth.* 30; *Vit. X Orat.* viii. 53, p. 847, and SUIDAS) had alleged that letters of Aristotle's had been found which were hostile to Athens; that he had betrayed Stagira to the Macedonians, and that after the destruction of Olynthus he had betrayed to Philip the richest citizens of that city. As the last two are impossible, the first is probably untrue, as Aristocles himself recognised.

[2] The charge was brought by Demophilus on the instigation of the Hierophant Eurymedon, related to the deification of Hermias, and alleged as proofs the poem noticed (p. 20, n. 3), and the alleged sacrifice (p. 20, n. 1): cf. ATHEN. xv. 696 a, 697 a; DIOG. 5; ANON. MENAG., SUIDAS, and HESYCH. Origen (*c. Cels.* i. 65) suggests, out of his own fancy, τινὰ δόγματα τῆς φιλοσοφίας αὐτοῦ ἃ ἐνόμισαν εἶναι ἀσεβῆ οἱ Ἀθηναῖοι. The weakness of the charge proves that it was only a blind, although perhaps the Hierophant may have hated the philosopher's liberalism. An honest charge of atheism in the Athens of that day was hardly possible, although the mass of the people could still be moved by it. Grote (18 sq.) shows how in this connection the Athenians would be impressed by the story that Aristotle had given heroic honours to an eunuch who was first a slave and then a tyrant. Grote also notices (p. 14) how mortifying the mission of Aristotle's adopted son was for Hellenic pride (*v.* p. 5, n. 7). The further suggestion of Grote (p. 37. cf. GRANT, p. 24) that the enmity of the school of Isocrates had to do with the prosecution of Aristotle may be true, but the fact that Demophilus was a son of Ephorus, and that the latter, and perhaps both, belonged to that school is not sufficient proof. We have still less ground to accuse the Academic school of having any share in it.

[3] His remarks that 'he would not give the Athenians a second chance of sinning against philosophy,' and that 'Athens was the

bœa,[1] where he had a country house, to which he had sometimes retired before,[2] and his enemies could only inflict on him unimportant insults.[3] To Theophrastus[4] he gave over his teaching work at the Lyceum, as a substitute during his absence. But it was not given

place spoken of by Homer where ὄγχνη ἐπ' ὄγχνῃ γηράσκει, σῦκον δ' ἐπὶ σύκῳ, in allusion to the sycophants, are quoted by DIOG. 9; ÆLIAN, iii. 36; ORIGEN, *ut supra*; EUSTATH. *in Odyss.* H 120, p. 1573; AMMON. p. 48; *V. Marc.* 8; *Ammon. Latin.* 17, the last mentioned placing them in a letter to Antipater. FAVORINUS, *apud* DIOG. 9, says the Homeric line occurred in a written *Apologia*, which is known also to the *Anon. Menag.* and to ATHEN. xv. 697 a, both of whom doubt its genuineness. One does not see why Aristotle, once in safety, should write a useless defence. It was no doubt a rhetorical exercise in imitation of the Socratic *Apologia* (cf. the fragment given by Athenæus with PLAT. *Apol.* 26 D sq.).

[1] Apollodor. *apud* DIOG. 10 is made to say that this was in Ol. 114, 3, *i.e.* in the latter half of 322 B.C. This is improbable, for Strabo (x. 1, 11) and Heraclides *ap.* DIOG. x. 1 speak as if he lived a considerable time in Chalcis; and besides it is more likely that the attack on Aristotle happened in the first uprising against the Macedonian party than that it was begun after Antipater's decisive victories in Thessaly, and that Aristotle fled in good time instead of waiting through the whole of the Lamian war. Probably, therefore, he left Athens late in the summer of 323, and Apollodorus only said what we find in DIONYS. *Ep. ad Amm.* i. 5, that Aristotle died in Ol. 114, 3, having fled to Chalcis. It is not possible to assume (with STAHR, i. 147) an earlier emigration of Aristotle to Chalcis, on the authority of the statement of Heraclides that Aristotle was living in Chalcis when Epicurus came to Athens, τελευτήσαντος δ' Ἀλεξάνδρου . . . μετελθεῖν ['Επίκουρον] εἰς Κολοφῶνα. For Aristotle's flight was due only to the danger that threatened him at Athens, which arose only on Alexander's unexpected death; and he cannot therefore have gone to Chalcis before the news reached Athens, in the middle of 323. Either Heraclides or Diogenes must be inexact. The Pseudo-Ammonius (cf. p. 25, n. 5 *supra*) and David (*Schol. in Ar.* 26 b. 26) assign impossible dates.

[2] Cf. STRABO, x. 1, 11, p. 448.

[3] In a fragment of a letter to Antipater probably of this time (*ap.* ÆLIAN, *V. H.* xiv. 1, cf. p. 44, n. 4 *infra*) Aristotle makes mention τῶν ἐν Δελφοῖς ψηφισθέντων μοι καὶ ὧν ἀφῄρημαι νῦν. What this was—whether a monument, proëdria, or other honorary privilege—we do not know. If it was given him by Athens, it may be connected with the services noticed p. 24, n. 3, *supra*.

[4] DIOG. v. 36 and following lines, SUID. *s. v.* Θεόφρ.

to Aristotle to enjoy his retirement long. In the following year, that is, in the summer of 322 B.C.[1], he succumbed to a disease from which he had long suffered.[2] So it chanced that of his two great contemporaries he survived Alexander by less than a year, and predeceased Demosthenes only by a short interval. His body is said to have been taken to Stagira.[3] His last will is preserved to us,[4] and it is a monument of his

[1] Apollod. *ap.* DIOG. 10, *V. Marc.* 3, *Ammon. Latin.* 12, and DION. *Ep. ad Amm.* i. 5, give Ol. 114, 3 as the year. It was about the time of Demosthenes' death (APOLLOD. *ibid.*), but a little earlier (GELL. *N. A.* xvii. 21, 35). As that date is given by PLUT. (*Dem.* 30) as the 16th of Pyanepsion Ol. 114, 3 = Oct. 14, 322, Aristotle must have died between July and Sept. of that year.

[2] That he died by illness is stated by Apollod. and Dionys. *ut supra*; cf. GELL. xiii. 5, 1. Censorin. (*Di. Nat.* 14, 16) adds: *hunc ferunt naturalem stomachi infirmitatem crebrasque morbidi corporis offensiones adeo virtute animi diu sustentasse, ut magis mirum sit ad annos sexaginta tres eum vitam protulisse, quam ultra non pertulisse.* The statement of Eumelus *ap.* DIOG. 6 (*de quo v.* p. 2, n. 2, p. 6, n. 3 *supra*) followed by the Anon. Menag. and Suidas, that he poisoned himself with hemlock, or (as Hesych. has it) that he was condemned to drink hemlock, is probably a confusion with the death of Demosthenes or of Socrates. It cannot be historic, because the best evidence is against it, because it is contrary to Aristotle's own principles (*Eth. N.* ii. 11, 1116 a, 12, v. 15 *init.*, ix. 4, 1166 b, 11), and because it does not fit the circumstances, for in Eubœa he was in no danger. The tale (found only in ÆLIAS CRETENSIS, p. 507 D) that he threw himself into the Euripus because he could not discover the causes of his visions, and the variant of the same in JUSTIN. cohort. 36, GREG. NAZ. *Or.* iv. 112, or PROCOP. *De Bello Goth.* iv. 579, that his fruitless meditations on a vision wore him out with worry and fatigue, need no refutation, though Bayle (art. Aristotle, n. Z) thinks the latter a fitting end; cf. STAHR, i. 155.

[3] Related only by *V. Marc.* 4 and *Ammon. Latin.* 13, and with the addition that an altar was built on his grave and the council meetings held there; and that a festival (Ἀριστοτέλεια) was instituted and a month named after him. The evidence is not good; but as he was not only the most illustrious citizen but also the re-founder of Stagira (cf. DIO. *Or.* 47, 224, who says that Aristotle alone had the fortune to be τῆς πατρίδος οἰκιστὴς) the story is not wholly improbable.

[4] *Apud* DIOG. 11 sq; probably (cf. v. 64) taken, like the wills of Theophrastus, Strato, and Lyco, from Aristo, a noted

faithful attachment and careful provision for all who were connected with him, including his slaves. Theo-

Peripatetic *circ.* 200–250 (*lege* 'Αρίστων ὁ Κεῖος), who will be mentioned in his place. Hermippus (*circ.* 200–220) cited the same record (*v.* ATHEN. xiii. 589 *c.*), which according to *V. Marc.* 8, and *Ammon. Latin.* 17 was also quoted by Andronicus and Ptolemæus for the catalogues of Aristotle's writings, *de q. infra.* *V. Marc.* says Aristotle left a διαθήκη . . . ἣ φέρεται παρά τε 'Ανδρονίκῳ καὶ Πτολεμαίῳ μετὰ [τῶν] πινάκ[ων] τῶν αὐτοῦ συγγραμμάτων (*Ammon. Latin.* 'cum voluminibus suorum tractatuum;' cf. HEITZ, *Verl. Schr. d. Ar.* 34). The external evidence for the will is therefore good; the more because it is likely that the wills of Aristotle and his followers would be carefully preserved by the Peripatetic school (for which those of Theoph., Strato, and Lyco were a kind of foundation charter), and because Aristo was himself the immediate successor of Lyco. The document has also all internal signs of genuineness, and the objections which have been urged against it (cf. GRANT, 26) prove little. It is objected that it mentions neither a house in Athens nor a library, both of which Aristotle possessed. A forger, however, would never have omitted the latter, which was the thing of chief interest for the school; but it is very possible that Aristotle had already made arrangements about it, which did not require to be repeated in the extant will, that being rather a set of directions to friends than, like the three others quoted, a regular disposition of his whole property. Grant thinks it unlikely that Pythias was not yet marriageable or that Nicomachus was a lad; but this is not so. Why may not Aristotle's wife Pythias, perhaps after the death of older children, have borne him a daughter ten years after their marriage? or why might Aristotle not have by a second wife, for whose remarriage he provides, a son who would be a lad when his father was sixty-three? Besides, we know from other sources that the education of Nicomachus was taken over by Theophrastus. The naming of Antipater arouses in Grant a suspicion that the forger inserted him as a historic name; but it is clearly natural that Aristotle might appoint him in order to place the carrying out of his directions for the benefit of those depending on him under the protection of his powerful friend. And this is all that is meant when he is named first in the honorary position of ἐπίτροπος πάντων, whereas the carrying out of the business provisions of the will is left to Theophrastus and the other ἐπιμεληταί. Objection is taken to the provisions for four statues of animals which Aristotle is said to have vowed to Zeus Soter and Athene the Preserver, for Nicanor's safety (DIOG. 16), as being an imitation of the Socratic votive offering for Asclepios (PLAT. *Phæd.* 118, A). This, however, is far-fetched and the point is unimportant. Little as

phrastus he named as the chief of his school,[1] and to him he left the best part of his inheritance, his books.[2]

We are but poorly informed as to the personal traits of Aristotle's character. Excepting a few details as to his personal appearance,[3] almost the only statements we possess are the attacks of his enemies. Most of these charges have already been shown to be worthless—such as those concerning his relations with Plato, with Hermias, with his two wives, and with Alexander, his alleged misconduct in youth, and the political turpitude of his later years.[4] What remains of the stories told

Aristotle believed in vows or in the mythic personalities of Zeus and Athene, yet it is quite natural that he should erect a monument of his love for his adopted son in their common home, Stagira (to which the statues were to be sent), in a fashion which accorded with Greek custom. He himself in *Ethics* iv. 5 reckons votive monuments and offerings among the forms in which the virtue of μεγαλοπρέπεια shows itself.

[1] The pretty story as to the way in which he expressed his choice is well known (GELL. *N. A.* xiii. 5, where 'Eudemus' must be substituted for 'Menedemus'). It is quite credible, and not unlike Aristotle.

[2] STRABO, xiii. 1, 54, p. 608; PLUT. *Sulla*, c. 26; ATHEN. i. 3, a, with which cf. DIOG. v. 52.

[3] DIOG. 2 calls him ἰσχνοσκελὴς and μικρόμματος, and an abusive epigram in the Anthology (iii. 167, Jac.), which deserves no weight, σμικρὸς, φαλακρὸς, and προγάστωρ. We hear of a lisp in pronouncing R, to which the word τραυλὸς (*ap.* DIOG. 2, ANON. MENAG., SUID., PLUT. *Aud. Poet.* 8, p. 26, and *Adulat.* 9, p. 53) refers. Pausanias (vi. 4, 5) mentions a statue said to be of Aristotle; as to others, *v.* STAHR, i. 161 sq, and as to those extant, especially the life-size sitting statue in the Palazzo Spada at Rome, *v.* SCHUSTER, *Erhalt. Portr. d. griech. Philos.* Leipz. 1876, p. 16, where they are photographed. The sitting statue has a lean face, earnest and thoughtful, showing the lines of severe mental labour, and with a delicate, clear-cut profile. It impresses us with its life-like truth to nature, and the workmanship is so excellent that it may well be an original work dating from the time of Aristotle or his immediate successor. Directions are given in Theophrastus' will (DIOG. v. 51) that the Μουσεῖον begun by him should be finished: ἔπειτα τὴν Ἀριστοτέλους εἰκόνα τεθῆναι εἰς τὸ ἱερὸν καὶ τὰ λοιπὰ ἀναθήματα ὅσα πρότερον ὑπῆρχεν ἐν τῷ ἱερῷ, which probably is to be understood of a statue already erected.

[4] Cf. p. 8 sq.; 19, n. 4; 20, n. 1, 2; 33, n. 4; 35, n. 1, 5,

by his many enemies[1] has for the most part little probability.[2] Nor do the accounts we have give us any right to lay to Aristotle's charge either a self-seeking sort of shrewdness, or a jealous and little-minded greed for fame.[3] The first of these charges concerns chiefly his relations with the Macedonian rulers. The second refers to the criticisms he allows himself to make in writing of his cotemporaries and his forerunners. But it cannot be proved that he ever sought the favour of Philip and

*supra*. Another calumny is Tertullian's *Ar. familiarem suum Hermiam turpiter loco excedere fecit* (*Apologet*. 46), which in the context can only mean he betrayed him, a tale so senseless and wicked that it required a Tertullian to invent it. The story of Philo of Byblos *ap*. SUID. Παλαίφ., as to immoral relations with the historian Palæphatus of Abydos is equally baseless.

[1] THEMIST. *Orat*. xxiii. 285 talks of a στρατὸς ὅλος of Aristotle's calumniators. By him, Aristocl. (*ap*. EUS. xv. 2) and Diogenes (11, 16) the following are named: Epicurus, Timæus, Eubulides, Alexinus, Cephisodorus, Lyco, Theocritus of Chios, Demochares, and Dicæarchus, within a generation of Aristotle.

[2] Such as the accusations to be found in ARISTOCL. and DIOG., *ut supra*; SUID. Ἀριστ.; ATHEN. viii. 342, xiii. 566; PLIN. *H. N.* xxxv. 16, 2; ÆLIAN, *V. H.* iii. 19; THEODORET, *Cur. Gr. Aff.* xii 51, p. 173; LUCIAN, *Dial. Mort.* 13, 5, and *Paras.* 36; that Aristotle was a glutton, and for that reason went to the Macedonian Court and flattered Alexander, and that at his death 75 (or even 300) dishes were found in his house: or that he was immoral in relation to Pythias and Herpyllis, and was also enamoured of Theodectes of Phaselis: and again that he was so effeminate that he bathed in warm oil (doubtless for medical reasons, cf. DIOG. 16 and p. 37, n. 2, *supra*), and so miserly that he sold the oil afterwards: or that in his youth he was too fashionable for a philosopher (which, as he was rich and brought up at Court, is possible): and that he was impudent and sneering. If there were any facts underlying these stories, we may conclude from the character of the narrators that they were in any case trivial; and we can see in the passages of Lucian and Theodoret and his quotation from Atticus how Aristotle's own statements as to wealth and pleasure were twisted to support these suspicions.

[3] Even Stahr (i. 173 sq) pays too much attention to these charges.

Alexander by unworthy means,[1] and it was not to be expected that he should applaud or imitate the follies of a Callisthenes. To impute it to him as an offence, that he attached himself to the Macedonian party, is to apply to him an erroneous and inapplicable standard. By birth and training he was a Greek. But while all his personal ties attached him to the royal house to which he and his father owed so much, no one can say that the consideration of the general position of politics ought necessarily to have turned him against their policy. So satisfied was Plato of the untenable character of the existing political relations, that he had advocated sweeping changes. Plato's follower could the less evade the same conviction, since he had a keener insight into men and things, and had clearly detected the conditions on which the vitality of States and forms of government depends. With his practical acumen he could not put his trust in the Platonic ideal of a State; he was forced to seek the materials for a political reconstruction from among the political relations as they were and the powers already existing. At that day no

[1] Stahr thinks it sounds like flattery when Aristotle writes to Alexander (*Arist. Fragm.* No. 611, *apud* ÆLIAN, *V. H.* xii. 54) *ὁ θυμὸς καὶ ἡ ὀργὴ οὐ πρὸς ἴσους* (l. *ἥσσους* with Rutgers, Rose and Heitz) *ἀλλὰ πρὸς τοὺς κρείττονας γίνεται, σοὶ δὲ οὐδεὶς ἴσος*, but if this is genuine Aristotle said no more than the truth, and he wrote, according to Ælian, in order to appease Alexander's wrath against certain persons, for which purpose he tells him that one cannot be angry with inferiors, and that he stood above all men, which was surely true of the conqueror of the Persian Empire. We cannot tell whether the letter is genuine. Heitz (*Verlor. Schr. d. Arist.* 287) suggests that this fragment does not agree with that in Plut. (*Tranqu. An.* 13, p. 472; *Arist. Fragm.* 614, 1581, b) in which Aristotle is made to compare himself with Alexander, but the letter is much the more doubtful of the two.

new foundation could be found except in the Macedonian kingdom, for the Greek States were no longer able at once to maintain their independence against the foreigner and to reform their inner life. The whole course of history so far had proved this so conclusively, that even a Phocion was forced to say, in the Lamian War, that unless the moral conditions of Greece were altered there was nothing to be expected from an armed rising against Macedon.[1] Doubtless such a conviction would come far less readily to an Athenian statesman than to a friend of the Macedonian kings, who was a citizen of a small city like Stagira, once destroyed by Philip, and then reorganised as a Macedonian town. Can we blame him if he accepted that view, and, with a just appreciation of the political situation, attached himself to that party which alone had a future, and from which alone, if from any, Greece could still find salvation from the dissension and decay within, and the loss of power to face the enemy without? Can we condemn him if he felt that the old independence of the Greek cities must come to an end, when its basis in the civic virtue of their citizens was gone? Can we object if he believed that in his pupil Alexander was fulfilled the condition under which he held that monarchy was natural and just[2]—where one man stands out so clearly beyond all others in efficiency as to make their equality with him impossible? Can we complain if he preferred to see the hegemony of Hellas rather in the hands of such a man than in those of the 'great king' of Persia, for whose favour the Greek cities had

[1] PLUT. *Phoc.* 23.

[2] *Polit.* iii. 13 *fin.*

been bidding against each other ever since the Peloponnesian War, and hoped that he would give the Hellenes the only thing they lacked to become the rulers of the world—a political unity?[1]

As for the charge of jealousy of others' fame, it is true that his philosophical polemics are often cutting and sometimes unfair. But they never take on any personal colour, and it would be impossible to prove that they ever rest on any other motive than the desire to make his point as sharply, and establish it as completely as possible. If he does sometimes give us the impression of insisting on his own discoveries, we ought to set off against this the conscientiousness with which he seeks out every seed of truth, even the remotest, in the work of his predecessors; and remembering this, we shall find that all that remains is but a very intelligible and very pardonable self-appreciation.

Still less—to pass over minor matters[2]—need we attach any importance to the allegation that Aristotle hoped soon to see philosophy completed.[3] If he did, it would have been only the same self-deception of which many other thinkers have been guilty, including some who have not been, as he was, the teachers of mankind

[1] *Polit.* vii. 7, 1327 b, 29, reckoning the merits of the Greek race: *διόπερ ἐλεύθερόν τε διατελεῖ καὶ βέλτιστα πολιτευόμενον καὶ δυνάμενον ἄρχειν πάντων μιᾶς τυγχάνον πολιτείας.*

[2] Like the tale told by Valer. Max. viii. 14, 3, as a proof of Aristotle's *sitis in capessenda laude*, which is plainly an idle invention based on a misunderstanding of the *Rhet. ad Alex.* c. 1 *fin.* (cf. *Rhet.* iii. 9, 1410 b, 2).

[3] Cic. *Tusc.* iii. 28, 69: *Aristoteles veteres philosophos accusans qui existimavissent philosophiam suis ingeniis esse perfectam, ait eos aut stultissimos aut gloriosissimos fuisse: sed se videre, quod paucis annis magna accessio facta esset, brevi tempore philosophiam plane absolutam fore.*

for tens of centuries. In fact, the remark seems to have occurred in an early work of Aristotle's,[1] and to have related not to his own system but to Plato's, which professed to open out a prospect of an early completion of all science.[2]

So far as Aristotle's philosophical writings, the scanty fragments of his letters, the provisions of his will, and our incomplete accounts of his life afford us any picture of his personality, we cannot but honour him. Nobility of principles, a just moral sense, a keen judgment, a susceptibility to all beauty, a warm and lively feeling for family life and friendship, gratitude towards benefactors, affection for relatives, benevolence to slaves and those in need,[3] a loyal love for his wife, and a lofty conception of marriage far transcending the traditional theories of Greece—such are the traits that we can see. They all carry us back to that faculty of moral tact to which in his Ethics he reduced all virtue, backed as it was in him by a wide knowledge of men and by deep reflection. We are bound to suppose that the principles he asserts in his Ethics were the guides of his own life,[4] the recoil from all manner of one-sidedness and excess, and the orderly

[1] In the dialogue Περὶ φιλοσοφίας, to which it is rightly referred by Rose (*Ar. Fr.* No. 1) and Heitz (*Ar. Fr.* p. 33).

[2] As Bywater (*Journ. of Philol.* vii. 69) also says. In Aristotle's extant works he often refers to the need of further investigation.

[3] As to the former, cf. his will, which provides *inter alia* that none of those who had personally served him should be sold, and that several should be freed and even started in life. As to the latter, cf. his saying, *ap.* DIOG. 17, οὐ τὸν τρόπον, ἀλλὰ τὸν ἄνθρωπον ἠλέησα.

[4] Cf. his expressions in the Letter to Antipater, *ap.* ÆLIAN, *V. H.* xiv. 1 and *ap.* DIOG. 18. In the former fragment he says as to the withdrawal of former honours (*de q. v.* p. 36, n. 3,

appreciation of things which despises nothing that has its roots in human nature, but attributes an absolute value only to the spiritual and moral factors of life. And if his character, so far as we know it, and in spite of any little weaknesses which may have attached to it, seems to us lofty and honourable, still more are his powers and intellectual achievements altogether astounding. Never have so great a wealth of knowledge, so careful powers of observation, and so untiring a zeal for acquisition, been found in combination with such keenness and power of scientific thinking, with a philosophic insight so capable of piercing into the essence of things, with a width of view so fully capable of at once seeing the unity and coherence of all knowledge, and embracing and subordinating all its branches. In poetic swing, in richness of fancy, in the insight of genius, he cannot compete with Plato. His powers lay wholly on the side of knowledge, not of art.[1] That fascinating witchery of speech with which Plato holds us is hardly ever to be found in the extant works of the Stagirite, though many of those that are lost are praised, doubtless with justice, for their literary grace.[2] But he outstrips his master in all those qualities which mark the full manhood of science—in width and solidity

*supra*) οὕτως ἔχω, ὡς μήτε μοι σφόδρα μέλειν ὑπὲρ αὐτῶν μήτε μοι μηδὲν μέλειν; in the latter, as to one who had reviled him behind his back: ἀπόντα με καὶ μαστιγούτω.

[1] The few poetic attempts we have show no great gift. On the other hand his wit was noted (DEMETR. *De Eloc.* 128), and the apophthegms (*ap.* DIOG. 17 sq) and the fragments of letters (*ap.* DEMETR. 29, 233) give proof of it. That it went with a tendency to banter and sauciness of speech (ἄκαιρος στωμυλία), as Ælian (*V. H.* iii. 19) tells us of him in his youth, is possible, though not proved by the existing testimony.

[2] *De quo infra.*

of research, in purity of scientific method, in ripeness of judgment, in wary discrimination, in his compact brevity and inimitable keenness of statement, and in the definite use and comprehensive development of a scientific terminology. He cannot inspire us, lay hold of our hearts, weld in one the scientific and the moral energies, at all in the same way as Plato does. His work is drier, more professional, more closely confined to the field of cognition than Plato's had been. But within these lines he has, so far as one man might, achieved success. For thousands of years he showed philosophy her way. For the Greeks he inaugurated the age of learning. In every field of knowledge then open to him he enriched the sciences by original investigations, and advanced them by new conceptions. Even if we put at their highest possible measure the help he derived from his forerunners, and the assistance he obtained from scholars and friends, and perhaps also from trained slaves,[1] the range of his achievements still runs so far beyond the common standard, that we can scarcely understand how one man in a short life could accomplish it all, especially since we know that his restless soul had to wring from a weakly body the needful vitality for this gigantic work.[2] Aristotle has fulfilled his historic vocation and solved the philosophic task it set him, as scarce any other ever did. Of what he was as a man we know unhappily too little, but we

[1] Callisthenes of Babylon is said to have sent him information of astronomical observations there (SIMPL. *De Cœlo*, Schol. 503, a, 26, following Porph.), but the story is suspicious because of the addition that these observations went back 31,000 years.

[2] Cf. p. 37, n. 2, and DIOG. v. 16.

have no reason to believe the attacks of his foes, or to refuse to accord to him that favourable judgment which his own Ethics with many subsidiary indications must demand.

# CHAPTER II

## ARISTOTLE'S WRITINGS

### A.—*Consideration of the particular works seriatim*

THE literary activity of Aristotle startles us at the outset both by its extent and its manysidedness. The works which we have under his name extend over all branches of philosophy, and they exhibit a vast wealth of wide observation and historical learning. Yet to these extant works the ancient catalogues add a great number of others, of which only the titles or slight fragments now remain. Two of these catalogues we have: the first in two recensions, that by Diogenes (V. 21 sqq.), and that called the 'Anonymus Menagii': the other in certain Arabic texts.[1] The first list contains, in Diogenes, 146 titles, most[2] of which the 'Anonymus'[3] has preserved, leaving out[4] a few[5] and adding seven or eight new ones. An appendix adds forty-seven titles—many of which,[6] however, are only repetitions or variants of those already entered—and ten Pseudepigrapha.

[1] See both in the *Arist. Fragm.* of Rose and Heitz (*Ar. Opp.* v. 1463, Berlin ed., iv. b, 1 sq., Paris ed.)

[2] According to the earlier text 111, but as completed by Rose from an Ambrosian MS. 132.

[3] According to Rose's probable conjecture (*Ar. Libr. Ord.* 48) he was Hesychius of Miletus, who lived about 500.

[4] As to the possible grounds of this omission cf. HEITZ, *Verlor. Schr. Arist.* p. 15.

[5] 14 by one text, 27 by the other.

[6] If our count is right there are 9, *i.e.* Nos. 147, 151, 154, 155, 167, 171, 172, 174, 182, repeating

Both the sources agree in putting the total number of books at nearly 400.[1] The author of the first catalogue cannot be (as Rose imagines [2]) identified with Andronicus of Rhodes, the well-known editor and arranger of Aristotle's works,[3] though it is not to be doubted that that Peripatetic did compile a catalogue of Aristotle's writings.[4] For even if we could set aside the fact that Andronicus is said to have given the total number at 1,000 books,[5] and the circumstance that the extant index includes [6] the Περὶ ἑρμηνείας, which he rejected,[7] it remains clear that we should look to find in Andronicus's edition those writings above all that are included in our extant *Corpus Aristotelicum*, which is derived, speaking broadly, from his own. This is far from being true of the extant catalogues, for many important parts of the extant *Corpus* are either altogether absent or at least are not to be traced under

Nos. 106, 7, 111, 91, 98, 16, 18, 39 and 11 of the main list.

[1] DIOG. 34, and the ANON. MENAG. at the beginning of his list. The titles in Diog. (reckoning the Letters as one book for each correspondent named and the Πολιτεῖαι as a single book) give 375 books; those in the Anon. as completed by Rose, 391.

[2] *Arist. Pseudepig.* 8 sq.

[3] Cf. ZELLER, *Ph. d. Gr.* Pt. iii. a, 549, 3 (2nd edition).

[4] This is clear from the above-mentioned passage of Plut. (*Sulla*, 26) from the *V. Marc.* 8 (cf. p. 37, n. 4, *supra*) and David, *Schol. in Ar.* 24, a, 19. It is not credible that Andronicus merely adopted the catalogue of Hermippus (*v.* HEITZ, *Ar. Fr.* 12) which did not at all correspond with his own work. A similar catalogue of the writings of Theophrastus is ascribed to him by the Scholia at the end of his *Metaphysics* and at the beginning of the seventh book of the *Hist. of Plants*.

[5] DAVID, *Schol. in Ar.* 24, a, 19.

[6] This is the more remarkable because we gather from DIOG. 34 that the catalogue was to include only works recognised as genuine. Bernays (*Dial. d. Ar.* 134) therefore supposes that the book was inserted in the catalogue of Andronicus by a later hand.

[7] ALEX. *in Anal. Pri.* 52.

their later names and in their later form.[1] The converse theory[2] that the list in Diogenes was meant to contain only those writings which were left out of Andronicus's collection of the didactic works, is negatived by the fact that the list contains many important sections of the *Corpus*, and that it distinctly claims to be a *complete* review of the philosopher's works.[3] For similar reasons it is equally impossible that it can owe its origin to Nicolaus of Damascus,[4] or any other to-

[1] Of the books contained in our *Corpus Aristotelicum* Diogenes' list mentions only the following: Nos. 141, The *Categories*; 142, Π. ἑρμηνείας; 49, Προτέρων ἀναλυτικῶν; 50, Ἀναλ. ὑστέρων; 102, Π. ζῴων, 9 books (meaning no doubt the *History of Animals*, the spurious tenth book of which is afterwards, No. 107, called Ὑπὲρ τοῦ μὴ γεννᾷν); 123, Μηχανικῶν α'; 75, Πολιτικῆς ἀκροάσεως 8 books; 23, Οἰκονομικὸς α'; 78, Τέχνης ῥητορικῆς α' β'; 119, Ποιητικῶν α': and probably also the *Topics*, under two different names, *cf. infra*. Also Nos. 90, Π. φύσεως α' β' γ', and 45 (115), Π. κινήσεως α' (which are probably parts of the *Physics*): and No. 39, Π. στοιχείων α' β' γ' (meaning probably the two books Π. γενέσεως with our book iii. *De Cœlo*, or book iv. *Meteor.*); 70, Θέσεις ἐπιχειρηματικαὶ κε' (no doubt a recension of the *Problems*); 36, Π. τῶν ποσαχῶς λεγομένων (doubtless the treatise, often cited by Ar. under that name, which is now book v. of the *Metaphysics*); and 38, ἠθικῶν (only 5 books). Even assuming that all the suggested correspondences are correct, the list still omits important parts of our *Corpus*. The Anon. Menag. adds the *Topics* under that name (his No. 52) and the *Metaphysics*, to which he gives 20 books (if the text is right, *de quo infra*). The *First Analytic* is his 134, with 2 books, and the *Ethics* is 39, Ἠθικῶν κ' (*lege* α'–κ'). His appendix adds: 148, Φυσικὴ ἀκρόασις, ιη' (*lege* η'; 149, Π. γενέσεως καὶ φθορᾶς; 150, Π. μετεώρων, δ'; 155, Π. ζῴων ἱστορίας ι'; 156, Π. ζῴων κινήσεως (as 3 books); 157, Π. ζῴων μορίων (only 3 books); 158, Π. ζῴων γενέσεως (also 3 books); 174, Π. ἠθικῶν Νικομαχείων.

[2] Of Bernays, *Dial. Ar.* 133, and Rose, *ut supra*: cf. on the opposite side, HEITZ, *Verlor. Schr.* p. 19.

[3] 'Συνέγραψε δὲ πάμπλειστα βιβλία ἅπερ ἀκόλουθον ἡγησάμην ὑπογράψαι διὰ τὴν περὶ πάντας λόγους τἀνδρὸς ἀρετήν,' are the introductory words in DIOG. v. 21, but that does not mean that he would exclude the main philosophical treatises. The same is clear from § 34, where Aristotle's power of work is said to be proved ἐκ τῶν προγεγραμμένων συγγραμμάτων, numbering nearly 400.

[4] For his works on Aristotle

whom the edition of Andronicus was already known. Its compiler must have been [1] a scholar of the Alexandrine period, most probably Hermippus; [2] and he must either not have had the means or not have taken the trouble to give us more than a list of the manuscripts which were to be found [3] in a library accessible to him, presumably that of Alexandria. Otherwise it would be impossible for him to have omitted important works which can, as we shall see, be clearly proved to have been in use during the two centuries preceding the date of Andronicus.[4] The first catalogue, therefore, only shows us what writings appeared under Aristotle's name in the Library of Alexandria.

Of far later date is the other catalogue of Aristotelian writings, which two Arabic writers of the thirteenth century [5] copied from a certain 'Ptolemy'—probably a Peripatetic of the second century A.D., mentioned also by Greek writers.[6] His list seems to have reached the

cf. ZELLER, *Ph. d. Gr.* Pt. iii. a. 556, 2nd ed., and HEITZ, *Verlor. Schr.* 38.

[1] So HEITZ, 46 sq., followed by GROTE, i. 48, SUSEMIHL, *Ar. ü. d. Dichtk.* 19, *Ar. Pol.* xliii., NIETZSCHE, *Rhein. Mus.* xxiv. 181 sq.

[2] We are not expressly told that this scholar and Peripatetic, who wrote about 200 B.C., catalogued the works of Aristotle; but it is hardly to be doubted, seeing that he wrote a biography of Aristotle in at least two books which Diogenes used (cf. DIOG. v. 1, 2, and ATHEN. xiii. 589, xv. 696), and that his Ἀναγραφὴ τῶν Θεοφράστου βιβλίων is mentioned in the Scholia cited, p. 49, n. 4, *supra* (cf. HEITZ, *ibid.* 49, *Ar. Fr.* 11). Through what channel it came to the knowledge of Diogenes, we do not know.

[3] Brandis (*Gr.-röm. Phil.* ii. b, 1, 81) has shown that this is probably true of both the catalogues of Aristotle and Theophrastus given by Diogenes.

[4] Diogenes himself elsewhere cites works of Aristotle which are not in his list (BRANDIS, *ibid.*; HEITZ, 17), but this only proves that these references were taken from other sources than those from which he got the Catalogue.

[5] *De q. v.* ROSE, *Ar. Opp.*, p. 1469.

[6] One of these Arabic writers

Arabic copyists in an incomplete form. For while Ptolemy put the total of Aristotle's works at 1,000 Books, their lists comprise only some 100 treatises, counting about 550 Books.[1] Of the component parts of our extant *Corpus* only a few are wanting, and their absence may be partly accidental.[2] Some others are

(Ibn el Kifti, d. 1248, *ap.* ROSE, *ibid.*) says this Ptolemy was an admirer of Aristotle, who wrote a book, *Historiæ Ar. et Mortis ejus et Scriptorum Ordo*, addressed to Aa^clas (or A^ctlas): the other (Ibn Abi Oseibia, d. 1269, *ibid.*) also speaks of his *Liber ad Galas de vita Ar. et eximia pietate testamenti ejus et indice scriptorum ejus notorum.* Both copy from him biographical details as well as the Catalogue, but seem to know no more of him than that he lived '*in provincia Rum*' (*i.e.* the Roman Empire), and that he was a different person from the author of the *Almagest.* What they say, however, corresponds exactly with what David, *Schol. in Ar.* 22, a, 10 (after Proclus, cf. l. 23), says of a Ptolemy who reckoned the total of Aristotle's books (as did Andronicus, cf. p. 49, n. 5) at 1,000, ἀναγραφὴν αὐτῶν ποιησάμενος καὶ τὸν βίον αὐτοῦ καὶ τὴν διάθεσιν: and with the remark in *V. Marc.* 8, as to the same, that to his list of Aristotle's works he added his will. David takes this Ptolemy to be Ptolemæus Philadelphus, but this merely proves the ignorance of David, or the pupil who recorded his lectures; though we know that Ptolemæus Philadelphus himself was a collector of Aristotle's works (ATHEN. i. 3, DAVID, and AMMON. *Schol. in Ar.* 28, a, 13, 43), and was a pupil of Strato (DIOG. v. 58). The fact that the Ptolemy who compiled the Catalogue came after Andronicus is clear from the mention of Andronicus at No. 90, and of Apellicon at No. 86. Of the writers of that name known to us, Rose (*Ar. Libr. Ord.* 45) suggests as the same the Neoplatonist Ptolemæus, named by JAMBL. *ap.* STOB. *Ecl.* i. 904, and by PROCLUS *In Tim.* 7. Another was a contemporary of Longinus, but he is said (by PORPH. *V. Plot.* 20) to have written no scientific works. The most probable identification would be with the Peripatetic Ptolemy, whose attack on a definition of grammar by Dionysius Thrax is quoted by SEXT. MATH. i. 60, and by the Schol. in BEKKER'S *Anecd.* ii. 730, and whose date therefore must lie somewhere between Dionysius and Sextus (70–220 B.C.).

[1] An exact reckoning is not possible without going into the variations of the numbering in the different texts. If the 171 *Polities* were counted separately, they would raise the total to about 720.

[2] The most important omissions are the *Ethics* and the *Œconomics*; besides which there are the *Rhetoric. ad Alex.*, the book upon Melissus, &c.; and the tracts Π. ἀκουστῶν, Π. ἀναπνοῆς, Π. ἐνυπνίων, Π. μαντικῆς τῆς ἐν τοῖς ὕπνοις, Π. νεότητος καὶ γήρως,

named twice over. The fact that this Arabic catalogue was taken from a Greek original is proved by the Greek titles, often hopelessly miswritten, which are set against most of the items.

It is obvious that catalogues of such a character and origin offer no sufficient security either for the completeness of their reckoning or for the authenticity of the writings they include. Nothing but a full and accurate inquiry into the merits of each case can enable us to decide as to the claims of those texts or fragments which are handed down to us under Aristotle's name. Such an inquiry cannot here be fully carried out; but it will not be out of place to combine with a complete review of all the writings ascribed to Aristotle a concise appreciation of the points to be considered in passing judgment on their authenticity.[1]

To begin at the point where the old catalogues end, we may distinguish from the philosophical treatises those writings which dealt with personal matters—the letters, poems, and occasional pieces. Their number is relatively small; and if we exclude those whose genuine-

Π. ὕπνου καὶ ἐγρηγόρσεως, and Π. χρωμάτων; the Π. κόσμου, Π. ἀρετῶν καὶ κακιῶν, Π. θαυμασίων ἀκουσμάτων, and the Φυσιογνωμική. But as No. 40 includes the *De Memoria et Somno*, so it may be that others of the small scientific tracts are bracketed in the list under one title and number.

[1] As to the works known only by titles or fragments, cf. the thorough inquiry of Heitz (*Verlor. Schrift. d. Ar.*, 1865), refuting Val. Rose, whose learned essays, *De Ar. Librorum Ordine et Auctoritate*, 1854, and *Ar. Pseudepigraphus*, 1863, rejected too summarily all the lost and several of the extant books.—The writings named in the ancient Catalogues will be cited in this chapter by Rose's numbers (p. 48, n. 1); of the Catalogues themselves, that of Diogenes will be cited as D., that of the Anonymus Menagii as AN., and the Ptolemy of the Arabic texts as PT. *Ar. Fr.* will be used for the collection of the fragments by Rose in *Ar. Opp.* v. 1463 sq., Berlin ed.; and *Fr. Hz.*,

ness is doubtful or which are certainly forged, there is very little left. A few poems and poetic fragments,[1] and perhaps some part of the matter said to be cited from his *Letters*,[2] may stand. The so-called *Apologia* of Aristotle,[3] and the *Orations* in praise of Plato and Alexander,[4] must be rhetorical inventions of later date.

for that of Heitz in *Ar. Opp.* iv. b, 1 sq. of the Didot edition.

[1] For these, with the notices relating to them, *v.* BERGHK, *Lyr. Gr.* 504 sq., ROSE, *Ar. Pseud.* 598 sq., *Ar. Fr.* 621 sq., p. 1583, and *Fr. Hz.* 333 sq. The most important are those above cited (p. 12, n. 4, p. 20, n. 3), whose genuineness we have no reason to doubt. D. 145 mentions ἔπη and ἐλεγεῖα, and AN. 138; ἐγκώμια ἢ ὕμνους appear in AN. *App.* 180.

[2] The Letters of Aristotle, praised by DEMETR. *Eloc.* 230, SIMPL. *Categ.* 2 γ, *Schol. in Ar.* 27, a, 43, and others (cf. ROSE, *Ar. Ps.* 587, HEITZ, *Verl. Schr.* 285, and *Ar. Fr.* 604–620, p. 1579, *Fr. Hz.* 321 sq.) as the high-water mark of epistolary style, were collected in eight books by one Artemon, otherwise unknown (*v.* DEMETR. *Eloc.* 223, DAVID, *Schol. in Ar.* 24, a, 26, and PT. No. 87). Andronicus is said to have reckoned twenty books (PT. No. 90, cf. GELL. xx. 5, 10), but perhaps it was only twenty letters, which is the number in AN. 137. D. 144 names letters to Philip, letters to the Selybrians, four letters to Alexander (cf. DEMETR. *Eloc.* 234, *Ps. Amm.* 47), nine to Antipater, and seven to others. The letters of or to Diares (*de quo v.* SIMPL. *Phys.* 120), mentioned by PHILOP. *De An.* K. 2, are not in D. All extant Fragments seem to come from the editions of Artemon and Andronicus. It is difficult to say if any are genuine, since some are certainly not. Not only Rose (*Ar. Ps.* 585, *Ar. Libr. Ord.* 113) but also Heitz (*Verl. Schr.* 280, *Fr. Hz.* 321) considers all the letters forged. That the six now extant (*ap.* STAHR, *Ar.* ii. 169, and *Fr. Hz.* 329) are so is clear, and Heitz holds that they could not even have been in Artemon's collection.

[3] Cf. p. 35, n. 3, *supra*; *Ar. Fr.* 601, p. 1578; *Fr. Hz.* 320.

[4] An Ἐγκώμιον Πλάτωνος is quoted by Olympiod. *in Gorg.* 166 (v. *Jahrb. f. Philol.*, Suppl., xiv. 395, and *Ar. Fr.* 603, *Fr. Hz.* 319); but it is more than suspicious, since no one used what would have been the best source of Platonic biography. A Panegyric on Alexander *ap.* THEMIST. *Or.* iii. 55 (*Ar. Fr.* 602, *Fr. Hz.* 319) is condemned by the Fr. *ap.* RUTIL. LUPUS, *De Fig. Sent.* i. 18, if that belongs to it, Bernays' theory of another Alexander (*Dial. Ar.* 156) being very improbable. An Ἐγκλησία Ἀλεξάνδρου is named by AN. (No. 193) as spurious. Books Π. Ἀλεξάνδρου are ascribed by Eustath. *ap.* DIONYS. *Per.* v. 1140, and AN. *App.* 176, to Aristotle through some confusion between his name and Arrian's. Cf. HEITZ, *Verl. Schr.*

A second section of the writings may include those which dealt with scientific questions, but were yet essentially distinct in form from all the extant treatises, namely, the *Dialogues.*[1] We have repeated proofs[2] that Aristotle, in one class of his works, did make use of the form of dialogue. It is said that his Dialogues differed from those of Plato in the fact that the individuality of the persons conversing was not carried through,[3] and that the author kept the lead of the conversation in his own hands.[4] Of the known works of this kind, the *Eudemus*,[5] the three books *On Philosophy*[6] and the four books *On Jus-*

291, and MÜLLER, *Script. rer. Alex.* pref. v.

[1] Cf. BERNAYS, *Dialoge d. Ar.* (1863), HEITZ, *Verl. Schr.* 141–221, ROSE, *Ar. Pseud.* 23 sq.

[2] Cf. CIC. *Ad Att.* xiii. 19, 4, BASIL. *Ep.* 135 (167) *ap.* ROSE, *Ar. Ps.* 24, PLUT. *Adv. Col.* 14, 4, DIO CHRYS. *Or.* 53, p. 274, ALEX. *ap.* DAVID, *Schol. in Ar.* 24, b, 33, DAVID, *ibid.* 24, b, 10 sq., 26, b, 35; PHILOP. *ibid.* 35, b, 41, and *De An. E.* 2; PROCL. *ap.* PHILOP. *Ætern. M.* 2, 2 (cf. *Ar. Fr.* 10) and *In Tim.* 338 d; AMMON. *Categ.* 6, b (*ap.* STAHR, *Ar.* ii. 255); SIMPL. *Phys.* 2, b; PRISCIAN, *Solut. Proœm.* p. 553 b.

[3] BASIL. *Ep.* 135 (167) *ap.* ROSE, *Ar. Pseud.* 24. *Ar. Fr.* 1474. HEITZ, 146.

[4] CIC. *ut supra. Ad Quint. Fr.* iii. 5 does not refer to Dialogues. '*Aristotelius mos*,' in CIC. *Ad Fam.* i. 9, 23, has a wider sense; and refers to the '*in utramque partem disputare*,' cf. *De Orat.* iii. 21, 80; but see HEITZ, 149.

[5] This remarkable Dialogue (*de q. v.* BERNAYS, 21, 143 etc., and *Rhein. Mus.* xvi. 236 sq., ROSE, *Ar. Ps.* 52 sq., *Ar. Fr.* 32–43, p. 1479, *Fr. Hz.* 47) is called Εὔδημος (THEMIST. *De An.* 197, and cf. quotations in *Ar. Fr.* 41), or Περὶ ψυχῆς (D. 13, AN. 13 PLUT. *Dio* 22), or Εὔδημος ἢ π. ψυχῆς (PLUT. *Cons. ad Apol.* 27 p. 115, and Simpl. ap. *Ar. Fr* 42). We learn from PLUT. *Dio* 22, and CIC. *Divin.* 1, 25, 53 that it was dedicated to Aristotle's friend, Eudemus, who died in Sicily 352 B.C. (cf. p. 11 n. 4 *supra*), and it was probably written soon after (KRISCHE, *Forsch.* i. 16). Of the Fragments ascribed to it by Rose, more probable places will be indicated *infra* for Fr. 36, 38, and 43. Aristotle himself seems, in *De An.* i. 4, *init.* to refer to a discussion in the *Eudemus*, cf. *Ar. Fr.* 41.

[6] D. 3, AN. 3 (who by oversight gives four books), BERNAYS, 47, 95, ROSE, *Ar. Ps.* 27, *Ar. Fr.* 1–21, p. 1474, HEITZ, *Verl. Schr.* 179 sq., *Fr. Hz.* 30 sq., BYWATER, 'Aristotle's Dialogue

*tice*[1] seem to have been the most important. The first two are of particular interest, because they stand in such close relation, not only by their form but by their subjects, to the work of Plato, that there is much to be said for the conjecture that they were written in the period when Aristotle still belonged to the circle of Plato's scholars, and had not yet fully passed over to his later independent position.[2] There are certain other works

on Philosophy,' *Journ. of Philol.* vii. 64 sq. Priscian tells us the work was a dialogue (*Solut. Prooem.* p. 553), and it is confirmed by the statement (PLUT. *Adv. Col.* 14, 4, Procl. *ap.* PHILOP. *Æt. M.* 2, 2; v. *Ar. Fr.* 10) that Aristotle had in his Dialogues attacked and renounced the Ideal Theory; cf. *Ar. Fr.* 11 from the second book Π. φιλοσ. arguing against the Ideal Numbers. These three books are referred to (besides D.) by PHILODEM. Π. εὐσεβείας, col. 22, and following him, by CIC. *N. D.* i. 13, 33. The apparent reference in ARIST. *Phys.* ii. 2, 194, a, 35 (διχῶς γὰρ τὸ οὗ ἕνεκα· εἴρηται δ' ἐν τοῖς περὶ φιλοσοφίας) is as Heitz says (*Verl. Schr.* 180) very suspicious, since Aristotle nowhere else cites his Dialogues; but on the other hand the reference will not apply either to the Book on the Good (which could not be called Π. φιλοσ., cf. p. 61, n. 1, *infra*), nor to *Metaph.* xii. 7, 1072, b, 2, since as Aristotle left that book unfinished he could not quote it in the *Physics*. Rose's rejection of the Π. φιλοσ. is followed by Susemihl, *Genet. Ent. d. plat. Phil.* ii. 534; but the arguments are insufficient.

[1] D. 1, AN. 1, PT. 3, *Ar. Fr.* 71–77, p. 1487, BERNAYS, 48, ROSE, *Ar. Ps.* 87, HEITZ, *Verl. Schr.* 169, *Fr. Hz.* 19. CIC. *Rep.* iii. 8, 12, mentions this as a 'comprehensive' work in four books. According to PLUT. *Sto. rep.* 15, 6, it was attacked by Chrysippus (Ἀρ. περὶ δικαιοσύνης ἀντιγράφων): and the attacks of Carneades mentioned by LACTANT. *Epit.* 55 (*ap.* CIC. *Rep.* iii.) seem to have been also specially directed to this work. DEMETR. *Eloc.* 28 cites a passage from it. We are not told that it was a Dialogue, but that is inferred from its position at the head of D. which begins (Bernays, p. 132) with the Dialogues arranged according to number of books. It is, however, true that in the midst of the Dialogues (as No. 12) the *Protrepticus* comes in, which probably was not a Dialogue. Neither probably were Nos. 17–19. It is a question, therefore, whether the Anon. has not here preserved the original order: so that the Dialogues really include only the first thirteen numbers of AN., together with the *Symposion* which was misplaced in that list by reason of the textual error (*v.* p. 58, n. 1).

[2] This is specially true of the *Eudemus*. All the fragments of

which are supposed to have been dialogues, mainly by reason of the place assigned them in the catalogues; but some of them are only distantly connected with

this dialogue prove that it was built on the lines of the *Phædo*. They have in common not only their subject, the Immortality of the Soul, but also the artistic and philosophic method in which it is treated. Like the *Phædo* (60 E), the *Eudemus* was introduced (*Fr.* 32) by a revelation in a dream, the direct prototype of which is to be found in the other Dial. relating to the last days of Socrates (*Crito*, 44 A). As Plato concludes his work (108 D sq.) with an imaginative myth, so the *Eudemus* had also its mythic ornament (cf. *Fr.* 40, where the words of Silenus, δαίμονος ἐπιπόνου, etc., remind us also of *Rep.* x. 617 D, and *Fr.* 37, which must be taken in a mystical sense). As the *Phædo* (69 C) refers to the doctrines of the Mysteries, so *Fr.* 30 of the *Eudemus* recognises the validity of the customary honours to the dead. But the most remarkable resemblance between the two Dialogues is in their philosophical contents. Aristotle in the *Eudemus* insisted not only on Immortality, but also on Preexistence and Transmigration, defending in his own way the theory that the soul in its entrance into this life forgot the Ideas (*Fr.* 34, 35). As the *Phædo* based the decisive argument for immortality on the relation of the soul to the idea of life (105 C sq.), so the *Eudemus* also called the soul εἶδός τι (*Fr.* 42). As Plato worked up to this argument by a detailed refutation of the theory that the soul was the harmony of its body, here also Aristotle followed him (*Fr.* 41). Exactly on Plato's lines is likewise *Fr.* 36, where the misery of the soul tied to the body is imaged in a striking comparison; and even if Bywater (*Journ. of Phil.* ii. 60) and Hirzel (*Hermes*, x. 94) are right in referring this *Fr.* to the *Protrepticus*, still this also seems to have been on the same lines as the *Eudemus* (cf. p. 60, n. 1, *infra*). Aristotle took a more independent position against Plato in the books *On Philosophy*. It is true that the *Frs.* in which he defends the belief in the gods, the unity of God, and the rational nature of the stars (*Fr.* 14, 13, 16, 19, 20, 21, and the *Fr.* ap. CIC. *N.D.* ii. 49, 125, *de q. v.* BRANDIS, ii. b, 1, 84; HEITZ, 228, refuting ROSE, *Ar. Ps.* 285), read like Plato, and that *Fr.* 15 (*de q. v.* BERNAYS, 110, and *Fr. Hz.* 37) is evidently modelled on *Rep.* ii. 380 D. Nevertheless, Aristotle decisively declared himself in this work (*Fr.* 10, 11, cf. p. 55, n. 6) against the theory of the Ideas and Ideal Numbers, declared the world to be not only, as Plato said, unending, but also beginningless (v. *Frs.* 17, 18, with which BYWATER, 80, well compares PLUT. *Tranqu. An.* 20, p. 477); and gave in Book I. (*v.* Bywater's reconstruction thereof from PHILOP. in *Nicom. Isag.*; CIC. *Tusc.* iii. 28, 69; PROCL. *in* EUCL. p. 28; cf. *Ar. Fr.* 2-9) a general theory of the develop-

the philosophic system,[1] and others are of doubtful authenticity.[2]

ment of humanity to culture and philosophy, which, although it connects with Plato by the remark (*ap.* PHILOP.) that the spiritual and divine principle, in spite of its own light, appears to us dark διὰ τὴν ἐπικειμένην τοῦ σώματος ἀχλύν, and by the theory of periodic floods whereby humanity was thrown back into savagery (cf. PLATO, *Tim.* 22 D, *Laws*, iii. 677 A, 681 E), indicates clearly an independent view of history which goes beyond Plato not only in relation to the eternity of the world (*Meteor.* i. 14, 352 b, 16; *Polit.* vii. 9, 1329 b, 25; *Metaph.* xii. 8, 1074 a, 38; cf. BERNAYS, *Theophr. ü. d. Frömmigk.* 42), but to the process of spiritual development (*Metaph.* i. 1, 981 b, 13, and 2, 982 b, 11 sq.). Aristotle's interest in scholarly inquiries appears in the passages of this work on the Magi, on Orpheus, on the Seven Wise Men, and on the development of philosophy from their time to his own; and his critical sense is shown in his discussion of the story of Orpheus in *Fr.* 9. Taking all this into consideration, the books *On Philosophy* show, as compared with the *Eudemus*, a remarkable advance in independence of thought, leading to the suggestion that they were written later, perhaps at the end of Plato's life.—Krische (*Forsch.* i. 265) sought to identify the 3 bks. Π. φιλοσ. with *Metaph.* i., xi., xii.; but this is now untenable (cf. HEITZ, 179, and *infra*, p. 76 sq.). It is more probable that they were used for various passages of *Metaph.* i., xii., and for the bk. Π. οὐρανοῦ (*v.* BLASS, *Rhein. Mus.* xxx. 1875, p. 481). There must be, however, much variation, and Blass' view that certain passages are taken verbally from the Π. φιλοσ. is improbable.

[1] To this class belong the 3 bks. Π. ποιητῶν (D. 2, AN. 2, PT. 6; BERNAYS, 10 sq., 60, 139; ROSE, *Ar. Ps.* 77; *Ar. Fr.* 59–69, p. 1485; HEITZ, *V.S.* 174 sq.; *Fr. Hz.* 23). That this work was a Dialogue is doubted by MÜLLER, *Fr. Hist.* ii. 185; but it is proved not only by its place in the Catalogues, but also by an express statement in *V. Marc.* p. 2, and by the form of *Fr.* 61. It was probably used as a genuine work of Aristotle by Eratosthenes and Apollodorus, but we cannot be sure that their references (*Fr.* 60 *ap.* DIOG. viii. 51) may not point to another work, possibly the *Politeiai*. Aristotle, however, himself refers at the end of *Poet.* 15 to a discussion in the ἐκδεδομένοι λόγοι, which it is most natural to apply to the Π. ποιητῶν, as in the *Rhetoric* (which ROSE, *Ar. Ps.* 79, suggests) there is no corresponding passage. The few references we have, which are mostly historical notes, show nothing that throws doubt on the genuineness of the work. *Fr.* 66 contains statements as to Homer, evidently from a tradition current in Ios, which (notwithstanding NITZSCH, *Hist. Hom.* ii. 87, MÜLLER, *ut supra*, and ROSE, *Ar. Ps.* 79) do not prove the spuriousness of the book, since they might well have been introduced in the Dial. without being believed by the author.

With the *Dialogues* may be connected another set of writings, which did not take that form, but were

For the title Π. ποιητῶν we find also (*Fr.* 65, 66, 69; cf. SPENGEL, *Abh. d. Münchn. Akad.* ii. 213; RITTER, *Ar. Poet.* x.; HEITZ, *V. S.* 175) that of Π. ποιητικῆς, which, unless it is a mere confusion, indicates that the work was not purely historical, but contained discussions on the Art of Poetry as well as information about the poets.—After the Dialogues, which made several books, there follows in the lists the Πολιτικὸς, which consisted, according to D. 4, of 2 books, according to AN. 4, of one (*Fr.* 70, p. 1487; ROSE, *Ar. Ps.* 80; BERNAYS, 153; HEITZ, *V.S.* 189, *Fr. Hz.* 41); and thereafter the following, in one book each; Π. ῥητορικῆς ἢ Γρύλλος (D. 5, AN. 5; the addition of γ′ is obviously a false reading, though PT. 2 b, *ap.* IBN ABI OSEIBIA has 'De Arte Rituri iii.' Cf. *Ar. Fr.* 57 sq. p. 1485; ROSE, *Ar. Ps.* 76; BERNAYS, 62, 157; HEITZ, *V.S.* 189, *Fr. Hz.* 41); the Νήρινθος (D. 6, AN. 6; ROSE, *Ar. Fr.* 53, p. 1484, *Ar. Ps.* 73; BERNAYS, 84; HEITZ, *V.S.* 190, *Fr. Hz.* 42), doubtless the same as the διάλογος Κορίνθιος, of which THEMIST. *Or.* 33, p. 356 speaks; the Σοφιστὴς (D. 7; AN. 8; PT. 2; *Ar. Fr.* 54–56, p. 1484; *Ar. Ps.* 75; *Fr. Hz.* 42), of which nothing remains except a few remarks on Empedocles, Zeno, and Protagoras; the Μενέξενος (D. 8, AN. 10), of which there are no fragments; the Ἐρωτικὸς (D. 9; AN. 12; *Ar. Fr.* 90–93, p. 1492; *Ar. Ps.* 105; HEITZ, *V.S.* 191, *Fr. Hz.* 43); the Συμπόσιον (D. 10; AN. 19, where συλλογισμῶν is a miswriting; *Ar. Fr.* 107 sq. p. 1495; *Ar. Ps.* 119; *Fr. Hz.* 44; cf. HEITZ, *V.S.* 192, who rightly questions the application of PLUT. *N. P. Suav. V.* 13, 4 to this Dialogue); the Π. πλούτου (D. 11; AN. 7; *Ar. Fr.* 86–89, p. 1491; *Ar. Ps.* 101; HEITZ, *V. S.* 195, *Fr. Hz.* 45) probably attacked by the early Epicurean, Metrodorus, if the proper reading in PHILODEM. *De Virt. et Vit.* ix. col. 22, be (as seems probable; cf. SPENGEL, *Abh. d. Münchn. Akad.* v. 449, and HEITZ, *l.c.*) not Π. πολιτείας. but Π. πλούτου—the Dial. is nowhere quoted by name, and of the fragments reckoned as belonging to it Heitz rightly rejects *Fr.* 88; and the Π. εὐχῆς (D. 14; AN. 9; *Ar. Fr.* 44–46, p. 1483; *Ar. Ps.* 67; *Fr. Hz.* 55; BERNAYS, 122), to which we possess only one reference that can be identified with certainty, *i.e.* *Fr.* 46, which is too closely related to PLAT. *Rep.* vi. 508 E to permit its rejection.

[2] If we could say absolutely that the Dial. Π. εὐγενείας (D. 15; AN. 11; PT. 5; *Ar. Fr.* 82–85, p. 1490; *Ar. Ps.* 96; BERNAYS, 140; HEITZ, *V. S.* 202; *Fr. Hz.* 55), which was already questioned by PLUT. *Arist.* 27, is not genuine, it would follow (as Heitz suggests) that the story that Socrates was accused of bigamy in it rests upon some misunderstanding. This, however, seems hardly probable, because the story in question appears so frequently and so early in the Aristotelian School. As to the genuineness of the Dialogues

yet distinguished, as it seems, from the strictly scientific treatises by their popular style of treatment. These are (at least in part) ascribable to the same period of Aristotle's work.[1] To that period must also belong

named in the previous note, there are very few as to which we can form an approximate judgment; but there do not seem to be decisive grounds for rejecting any of them.

[1] To the same period with the *Eudemus* belongs also the *Protrepticus* (D. 12; AN. 14; PT. 1—where it is probably transposed with the Π. φιλοσ. and is therefore said to have three books.—*Ar. Fr.* 47–50, p. 1483; *Fr. Hz.* 46). According to TELES, *circa* 250 B.C., it was addressed to the Cyprian prince Themiso, and was known to Zeno and to his teacher Crates (*v.* STOB. *Floril.* 95, 21). ROSE, *Ar. Ps.* 68 (with a *fortasse*), BYWATER, *Journ. of Phil.* ii. 55, and USENER, *Rhein. Mus.* xxviii. 372, suppose it to have been a Dial., and BERNAYS, 116, gives no opinion; but HEITZ, *V. S.* 196, and HIRZEL, *Hermes*, x. 61, seem to be right in saying that it was a continuous essay. The reasons are (1) that Teles says Ἀρ. προτρεπτικὸν ὃν ἔγραψε πρὸς Θεμίσωνα: and although a Dial. like a drama may be *dedicated* to a man, τινὶ προσγράφειν, yet it cannot be *written to* anyone, πρός τινα γράφειν: (2) that all other προτρεπτικοὶ that we know were essays and not dialogues; even the pseudo-Platonic *Clitophon*, which got an unsuitable second title of Προτρεπτικὸς (Thrasyll. *ap.* DIOG. iii. 60), is no exception to this, for it is not a dialogue, but a speech introduced only by a couple of conversational remarks, which may therefore as properly be called προτρεπτικὸς as *Menexenus* with its longer conversational preface could be called ἐπιτάφιος (Thras. *ibid.*; AR. *Rhet.* iii. 14, p. 1415, b, 30). If Cicero used it as a model for his *Hortensius* (*Script. Hist. Aug. V. Sal. Gallieni*, c. 2), it may still be questioned whether the dialogue form was part of the imitation. As Usener, *ut supra*, shows, Cicero also used it for the *Somnium Scipionis*, Rep. vi., and, mediately or immediately, Censorinus, *D. Nat.* 18, 11. Bywater, *ut supra*, has also shown (but cf. Hirzel) that Jamblicus used it for his own *Protrepticus*.—Of a kindred nature apparently was the Π. παιδείας (D. 19; AN. 10; PT. 4; *Ar. Fr.* 51, p. 1484; *Ar. Ps.* 72; HEITZ, *V. S.* 307, *Fr. Hz.* 61). As no fragments are preserved, we cannot tell whether the Π. ἡδονῆς (D. 16, cf. 66; AN. 15; PT. 16; HEITZ, *V. S.* 203; *Fr. Hz.* 59) was a dialogue or not. The book Π. βασιλείας (D. 18; AN. 16; PT. 7; *Ar. Fr.* 78, 79, probably also 81, p. 1489; *Fr. Hz.* 59), which was addressed to Alexander, and apparently referred to by Eratosthenes (*ap.* STRABO, i. 4, 9, p. 66), was more probably an essay (*v.* HEITZ, *V. S.* 204) than a dial. (ROSE, *Ar. Ps.* 93, and BERNAYS, 56). On the other hand, the title Ἀλέξανδρος ἢ ὑπὲρ (περὶ) ἀποίκων [-κιῶν], if the text

the treatise *On the Good.*[1] It was an account of the substance of Plato's lectures,[2] and what little is recorded from or of it gives no reason to doubt its genuineness.[3]

be correct, rather suggests a dial. (D. 17; *Ar. Fr.* 80; BERNAYS, 56; *Fr. Hz.* 61. HEITZ, *V. S.* 204, 207, suggests πρὸς 'Αλέξ. ὑπὲρ ἀποίκων καὶ π. βασιλείας. A preferable conjecture would be, ὑπ. ἀποίκων α'. π. βασιλείας α'). Other fragments which Rose places among the Dials. will be referred to *infra.*

[1] The Π. τἀγαθοῦ consisted, according to D. 20, of three books; AN. 20, one book; PT. 8, five books: ALEX. *ad Metaph.* iv. 2, 1003 b, 36, 1004 b, 34, 1005 a, 2 repeatedly quotes Book II., and the regular form of citation is ἐν τοῖς π. τἀγ. Apart from the Catalogues, we never hear of this work except in the Aristotelian Commentators, whose notices are collected and discussed by BRANDIS, 'Perd. Ar. Libr. de Ideis et de Bono,' *Gr.-röm. Phil.* ii. b, 1, 84; KRISCHE, *Forsch.* i. 263; ROSE, *Ar. Ps.* 46, *Ar. Fr.* 22–26, p. 1477, and HEITZ, *V. S.* 209, *Fr. Hz.* 79. Brandis (*ibid.*) has shown that none of them except Alexander possessed the work itself. Heitz, p. 203, doubts this even as to Alex., because he in one place (p. 206, 19) distinguishes the ἐκλογὴ τῶν ἐναντίων noticed Ar. *Metaph.* iv. 2, 1004 a, 2 (*de q. infra*) from the second book Π. τἀγαθοῦ, and in another place (p. 218, 10, 14) identifies them. These passages seem, however, only to show that Alexander knew of no ἐκλ. τ. ἐν. as a separate book, but saw in the second book Π. τἀγ. a discussion to which, as far as the sense went, Aristotle might be referring, so that he was not sure whether Aristotle's reference referred to the Π. τἀγ. or to a special work. If so, this makes rather for than against Alexander's knowledge of the Π. τἀγάθου. SIMPL. *De An.* 6, b, PHILOP. *De An.* C. 2 (cf. *Ar. Fr.* p. 1477 b, 35), SUID. 'Αγαθ. p. 35, b, believe that the words ἐν τοῖς περὶ φιλοσοφίας λεγομένοις in AR. *De An.* i. 2, 404, b, 18, refer to this work, whereas they really refer to Platonic writings (cf. Zeller, II. a. 636, 4). But this proves only that these writers knew the Π. τἀγαθοῦ at second hand. Rose's view that this work was a Dial. is refuted by HEITZ, *V. S.* 217. We cannot tell whether Aristotle published in his lifetime his notes upon the lectures of Plato, or whether they became public after his death. If the ἐκλογὴ τ. ἐναντ., cited by himself, formed part of them, the former would of course be true. It is clear that the book was in use before the end of the third century B.C., and certainly before the time of Andronicus, because of the mention of it in Diog.'s list; cf. p. 48 sq. *supra.*

[2] Referred to by Aristoxenus and others, cf. Zeller, Plato, 26. SIMPL. (*Phys.* 32, b, 104, b, Schol. 334, b, 25, 362, a, 8) mentions, besides Aristotle, Speusippus, Xenocrates, Heraclides and Hestiæus as having published the Platonic lectures.

[3] This is proved, against SUSEMIHL, *Genet. Entw. d. plat. Phil.* 2, 533, in Zeller's Plato, *ad loc.*

There is more doubt about the date of the work *On the Ideas*,[1] which Aristotle apparently refers to in the *Metaphysics*,[2] and which Alexander possessed.[3] The *Extracts* from some of Plato's writings [4] and the monographs on earlier and cotemporary philosophers [5]—

[1] This work is named in D. 54, and AN. 45 (which give it one book only) Π. τῆς ἰδέας or Π. ἰδέας. We have references, however, by ALEX. in *Metaph.* 564, b, 15 to the 1st book Π. ἰδεῶν, in 573, a, 12 to the 2nd, and in 566, b, 16 to the 4th (but in the last case we may well read A for Δ, with ROSE, *Ar. Ps.* 191, *Ar. Fr.* 1509, b, 36). SYRIAN, *In Metaph.* 901, a, 19, 942, b, 21 speaks of a work Π. τῶν εἰδῶν in two books. The same is meant in PT. 14 by the three books *De imaginibus, utrum existant an non*; but the Arabic title '*fari aiduln*' indicates that their Greek text read not Π. εἰδῶν, but Π. εἰδώλων; cf. ROSE, *Ar. Ps.* 185; *Ar. Fr.* 180–184 p. 1508; *Fr. Hz.* 86 sq.

[2] I. 990 b, 8 sq.; we have not only Alexander's statement that this passage refers to the work on Ideas, but it seems to be the natural inference from Aristotle's text itself that he is referring to some more detailed discussion of the Ideal Theory which is already known to his readers.

[3] Rose (*Ar. Ps.* 186) doubts this, but Alexander's own statements (cited in *Ar. Fr.* 183 *fin.*, 184 *fin.*) indicate as much.

[4] Τὰ ἐκ τῶν νόμων Πλάτωνος (D. 21, as 3 Bks., AN. 23 as 2).—Τὰ ἐκ τῆς πολιτείας α′ β′ (D. 22. PROCL. *in Remp.* 350; *Ar. Fr.* 176, p. 1507).—Τὰ ἐκ τοῦ Τιμαίου καὶ τῶν Ἀρχυτείων (*alias*: καὶ Ἀρχύτου; D. 94; AN. 85; SIMPL. *De Cœlo*, Schol. 491, b, 37: σύνοψιν ἢ ἐπιτομὴν τοῦ Τιμαίου γράφειν οὐκ ἀπηξίωσε); cf. *Fr. Hz.* 79.

[5] Π. τῶν Πυθαγορείων, D. 101 AN. 88: no doubt the same as is named Συναγωγὴ τῶν Πυθαγορείοις ἀρεσκόντων by SIMPL. *De Cœlo*, Schol. 492, a, 26 and b, 41 sq.; Πυθαγορικὰ (*ibid.* 505, a, 24, 35); Πυθαγορικὸς [-ον ?] (THEO. *Arithm.* 5); Π. τῆς Πυθαγορικῶν δόξης (ALEX. *Metaph.* 560, b, 25), and Π. τῆς Πυθαγορικῆς φιλοσοφίας (JAMBL. *V. Pyth.* 31). Probably the separate title Πρὸς τοὺς Πυθαγορείους, D. 97, is only a part of the same work, as D. gives each of them one book only, while Alexander and Simpl. quote from book 2. The reference in DIOG. viii. 34, cf. 19, probably belongs to this treatise (whether we there read ἐν τῷ περὶ κυάμων, or π. κυάμων only, cf. Cobet). Other notices of the work are collected by ROSE, *Ar. Ps.* 193, *Ar. Fr.* 185–200, p. 1510; *Fr. Hz.* 68.—We find also three books Π. τῆς Ἀρχυτείου [-του ?] φιλοσοφίας in D. 92, AN. 83, PT. 9; cf. *Ar. Ps.* 211, and *Fr. Hz.* 77, and cf. last note. Also Πρὸς τὰ Ἀλκμαίωνος, D. 96, AN. 87; Προβλήματα ἐκ τῶν Δημοκρίτου, 7 (? 2) books, D. 124, AN. 116 (cf. *Ar. Ps.* 213, *Ar. Fr.* 202 p. 1514, *Fr. Hz.* 77;) Πρὸς τὰ Μελίσσου, D. 95, AN. 86; Πρ. τὰ Γοργίου, D. 98, AN. 89; Πρ. τὰ Ξενοφάνους, [-κράτους in MSS.] D. 99; Πρ. τὰ

so far as these were genuine [1]—must, however, have been mostly compiled during Aristotle's first residence in Athens, or at least before his return from Macedonia. A collection of Platonic *Divisions* ascribed to him was no doubt a forgery.[2]

Far above all these in historic importance stand the works which set out the peculiar system of the Master in strict philosophical form. Speaking broadly, it is these alone which have survived the first century A.D., and have

Ζήνωνος, D. 100: our treatise *De Melisso*, &c., to which, besides the lost section as to Zeno, another cited at second hand by PHILOP. *Phys.* B. 9 as Πρ. τὴν Παρμενίδου δόξαν seems to have belonged. We know that this work was used by Simplicius (cf. Zeller, i. 474 sq.). There was also the Περὶ τῆς Σπευσίππου καὶ Ξενοκράτους [φιλοσοφίας], D. 93, AN. 84.

[1] We cannot judge as to the genuineness of several, of which we have the titles only. It is not impossible that Aristotle may have left, among his papers, extracts and criticisms on various philosophic systems written down in the course of his studies, and that recensions of these were published. It is also possible that similar collections may have passed themselves off under his name. That the latter was the case with the tracts in our *Corpus* on the Eleatic School is proved in ZELLER, *Ph. d. Gr.* i. 465 sq. It is more difficult to decide as to the authenticity of the work on the Pythagoreans. If all the fables (see ZELLER, *Ph. d. Gr.* i. 285) which appear in *Fr.* 186, were related as historic fact, the book could not be Aristotle's, but in view of the character of our informants it is very possible that *they* presented as history what *he* had only stated as a Pythagorean tradition. Similarly the meanings of the Pythagorean symbols (*Fr.* 190 sq.) and the contents of *Fr.* 188, which Isidor. *ap.* CLEMENT. *Strom.* vi. 641 falsely attributes to Aristotle himself, are merely references to Pythagorean theories. The rest of the passages cited from this book as to the Pythagorean system give no reason to reject it. The apparent contradiction between *Fr.* 200 (*ap.* SIMPL. *De Cælo*, Schol. 492, b, 39 sq.) and AR. *De Cælo* ii. 2, 285, b, 25 is quite reconcileable, without following Alexander in assuming a *falsa lectio*, for which, however, *Fr.* 195, *ap.* SIMPL. *ibid.* 492, a, 18, gives some ground.

[2] This is named in the existing lists only by PT. 53, as '*Divisio Platonis*' (formerly mistranslated '*jusjurandum*' or '*testamentum Pl.*'). It was, perhaps, the same as the Aristotelian διαιρέσεις (*v.* p. 75, n. 2, *infra*) elsewhere mentioned. A similar work, obviously a later recension of the Pseudo-Aristotelian text

thereby transmitted to mediæval and modern times a first-hand knowledge of the Aristotelian philosophy. Their preservation itself is no doubt primarily due to the fact that it was in them that that philosophy was first expounded in the systematic maturity in which he set it forth during the years of his teaching at Athens.

If we take what is now extant or otherwise known to us of this class of works, that which first meets us is the important set of treatises which laid the foundation for all later logic: the *Categories*,[1] the book on

used for the account given of Plato by DIOG. iii. 80, is printed by ROSE, *Ar. Ps.* 677–695 (and after him by *Fr. Hz.* 91), under the title, Διαιρέσεις Ἀριστοτέλους, *de q. v.* ZELL., *Ph. d. Gr.* ii. a. 382.

[1] The title of this work by the common (and probably correct) account is Κατηγορίαι; but we find it also named as: Π. τῶν Κατηγοριῶν, Κατηγορίαι δέκα, Π. τῶν δέκα κατηγοριῶν, Π. τῶν δέκα γενῶν, Π. τῶν γενῶν τοῦ ὄντος, Κατηγορίαι ἤτοι π. τῶν δέκα γενικωτάτων γενῶν, Π. τῶν καθόλου λόγων, Πρὸ τῶν τοπικῶν (or τόπων); cf. WAITZ, *Arist. Org.* i. 81, SIMPL. *in Cat.* 4, β, and DAVID, *Schol. in Ar.* 30, a, 3. The title Τὰ πρὸ τῶν τόπων was known to Andronicus according to Simpl. *ibid.* 95 ζ, Schol. 81, a, 27, and to Boëthius, *In Præd.* iv. p. 191 (who obviously got his knowledge from the same source as Simpl., *i.e.* Porphyry). Herminus, *circa* 160 A.D., preferred it to the ordinary name. David, however, (*Schol.* 81, b, 25), D. 59, and AN. 57 name a book called Τὰ πρὸ τῶν τόπων, besides the Κατηγορίαι, which is D. 141, AN. 132, PT. 25 b; and do not appear to think them the same. Andronicus was probably right (*ap.* SIMPL. *ut supra*, Schol. 81, a, 27) in identifying the title of Τὰ πρὸ τ. τόπων with the spurious appendix of the so-called 'Postprædicamenta'; and it may have been invented either, as he supposes, by the writer of that tract, or by some later editor who found the original name, Κατηγορίαι, too limited for the treatise as enlarged by the spurious addition. Aristotle himself refers to his theory of the Categories (*De An.* i. 1, 5, 402 a, 23, 410 a, 14, *Anal. Pri.* i. 37, cf. the quotations, *infra*, p. 189, n. 2, *q. v.*) as known to his readers, and he assumes this in other places also, which seems to indicate that he had dealt with it in a published work. There is a more definite reference in *Eth. N.* ii. 1 *init.* to *Categ.* c. 8 (cf. TRENDELENB. *Hist. Beitr.* i. 174). That in *Eth. Eud.* i. 8, 1217, b 27, may possibly refer not to the *Categ.* but to some work of Eudemus, and those in *Top.* ix., (*Soph. El.*) 4. 22. 166, b, 14. 178, a, 5, no doubt refer to the passage as to categories in *Top.* i. 9, *init.*,

which, however, is itself so brief and undeveloped that it presupposes an early and better account. Simpl. (*Categ.* 4 ζ, *Schol.* 30, b, 36) and David (*Schol.* 30, a, 24) say that Aristotle had also referred to this work in another place—not now extant—under the title of Κατηγορίαι or Δέκα Κατ. We are told also that, following Aristotle's example, Eudemus, Theophrastus, and Phanias, wrote not only 'Analytica,' and works 'Π. ἑρμηνείας,' but also Κατηγορίαι (AMMON. *Schol.* 28, a, 40, and *in q. v.* Porph. 15 m, DAVID, *Schol.* 19, a, 34, 30, a, 5, ANON. *ibid.* 32, b, 32, 94, b, 14; but Brandis in the *Rhein. Mus.* i. 1827, p. 270, rightly denies this as to Theophrastus, and doubts it as to Eudemus). The references in SIMPL. *Cat.* 106, a, 107, a, sq., *Schol.* 89, a, 37, 90, a, 12 do not prove that Strato referred to Aristotle's *Categories*. On the other hand, the ancient critics never doubted the genuineness of the extant book, although they rejected a second recension (*v.* SIMPL. *Categ.* 4 ζ, *Schol.* 39, a, 36; ANON. *ibid.* 33, b, 30; PHILOP. *ibid.* 39, a, 19, 142, b, 38; AMMON. *Cat.* 13, 17, and BOETH. *In Præd.* 113, all following Adrastus, a noted critic *circa* 100 A. D.; cf. *Fr. Hz.* 114). The only doubts suggested are by *Schol.* 33, a, 28 sq., and these apparently were not derived from Andronicus. The internal characteristics of the book, however, are in many ways open to criticisms, which Spengel (*Münchn. Gel. Anz.* 1845, 41 sq.), Rose (*Ar. Libr. Ord.* 232 sq.), and Prantl (*Gesch. d. Logik*, i. 90, 5, 204 sq. 243) have used to combat its genuineness, the latter saying that its compiler might be found 'in any master of a peripatetic school of the age following Chrysippus' (p. 207). Their critical positions, however, are not all tenable. Prantl (*ibid.*) takes exception to the number 10; but in the *Top.* i. 9, the same ten Categories are given, and we know from Dexipp. (*In Categ.* 40, *Schol.* 48, a, 46) and Simpl. (*ibid.* 47, b, 40) that Aristotle named these ten in other works also. It is true that Aristotle generally uses a less number; but that may only mean either that he here adduces all the ten because his object was logical completeness, or that he counted more Categories at an earlier time than he did later. He never assumed, as will be shown later, a fixed number of them. Again, it is objected that the Κατηγ. speaks of δεύτεραι οὐσίαι; but we find as parallels to this not only πρῶται οὐσίαι (e.g. *Metaph.* vii. 7, 13, 1032, b, 2, 1038, b, 10), but also τρίται οὐσίαι (*ibid.* vii. 2, 1028, b, 20, 1043, a, 18, 28). The words of Κατηγ. c. 5, 2, b, 29: εἰκότως . . . μόνα . . . τὰ εἴδη καὶ τὰ γένη δεύτεραι οὐσίαι λέγονται, are not to be translated 'the term δεύτ. οὐσ. is used for genera and species and rightly so,' since it was not commonly so used before Aristotle, but rather, 'there is reason to treat as a second class of substances only genera and species.' Again, when it is remarked in Κατηγ. c. 7, 8, a, 31, 39, that, strictly speaking, πρός τι includes those things only which not merely stand in a definite relation to some other thing, but have their essence in such a relation—οἷς τὸ εἶναι ταὐτόν ἐστι

the parts and kinds of propositions,[1] those on

τῷ πρός τί πως ἔχειν—there is no need to suspect here any trace of Stoic influence, since the πρός τί πως ἔχειν appears also in AR. *Top.* vi. c. 4, 142, a, 29, c. 8, 164, b, 4; *Phys.* vii. 3, 247, a, 2, b, 3, and *Eth. N.* i. 12, 1101, b, 13. It is true, however, that all the objections cannot easily be set aside. Nevertheless, the treatise bears in general a decisively Aristotelian impress; it is closely related to the *Topics* in tone and contents, and the external evidence is heavily in its favour.—The best conclusion seems to be, not that the whole is spurious, but that the seemingly un-Aristotelian elements are to be explained by the assumption that the genuine body of the work extends to c. 9, 11, b, 7 only, but that what followed has dropped out of the recension we possess, and is replaced only by the short note, c. 9, 11, b, 8–14. The so-called 'Postprædicamenta' (c. 10–15) were suspected as early as Andronicus (SIMPL. *ut supra*, Schol. 81, a, 27; AMMON. *ibid.* 81, b, 37), and Brandis has now proved they are added by another hand ('Ü. d. Reihenfolge d. Bücher d. Ar. Org.,' *Abh. d. Berl. Akad. Hist. phil. Kl.* 1833, 267, and *Gr.-röm. Phil.* ii. b, 406). It is another question whether it was compiled from Aristotelian fragments, as he suggests. The concluding paragraph, at c. 9, 11, b, 8–14, reads exactly as if it came in the place of further discussions which the editor cut out, justifying himself by the remark that there was nothing in them which did not appear in the earlier part. In the body of the work it is probable also that passages have been left out and others added in this recension; but much of the inconsequence of exposition and language may as easily be due simply to the fact that the *Categ.* were the earliest of the logical writings, and were written probably many years earlier than the *Analytics*.

[1] This book, Π. ἑρμηνείας, was in ancient times rejected as not genuine by Andronicus (so ALEX. *Anal. pri.* 52 a, and *Schol. in Ar.* 161 b, 40; AMMON. *De Interpr.* 6 a, and *Schol.* 97 b, 13; BOETH. *ibid.* 97 a, 28; ANON. *ibid.* 94 a, 21; PHILOP. *De An.* A 13, B 4), followed recently by Gumposch (*Log. Schr. d. Ar.*, Leipz. 1839) and Rose (*Ar. Ps.* 232). Brandis (*Abh. d. Berl. Akad.* 263 sq., cf. DAVID, *Schol. in Ar.* 24 b, 5) takes it to be an incomplete sketch of the work, to which c. 14 (rejected as early as Ammonius and passed over by Porphyry; cf. AMMON. *De Interpr.* 201 b; *Schol.* 135 b) has probably been added by a later hand. The external evidence for the work is good enough. Not only do all three lists agree in naming it (D. 152, AN. 133, PT. 2), but we are told that Theophrastus referred to it in his essay Π. καταφάσεως καὶ ἀποφάσεως (DIOG. v. 44; ALEX. *Anal. pri.* 124, *Schol.* 183 b, 1; more explicitly, after Alexander, BOETH. *ibid.* 97, a, 38; ANON. *Schol. in Ar.* 94, b, 13; cf. the Schol. *ap.* WAITZ, *Ar. Org.* i. 40, who, on *De Interpr.* 17, b, 16, remarks: πρὸς τοῦτό φησιν ὁ Θεόφραστος, etc.; cf. AMMON. *De Interpr.* 73, a, 122, b). It seems

conclusions and scientific method in general,[1] on the

also that Eudemus Π. λέξεως (ALEX. *Anal. pri.* 6, b, *Top.* 38, *Metaph.* 63, 15; ANON. *Schol. in Ar.* 146, a, 24) may have been an imitation of this book (not, as *Schol.* 84, b, 15, wrongly suggests, of the Categories; cf. the quotation from Ammon. in preceding note). This last suggestion, however, is uncertain, and the notices as to Theophrastus are not absolutely clear, for the texts show that he did not *name* the Π. ἑρμην. at all. Alexander thought he saw, from the way in which Theophrastus dealt with the subject (*thema*) in his own book, reason to infer that he had Aristotle in mind; but whether he was right in that inference or not, we cannot judge. The Schol. *ap.* Waitz has nothing to show that the reference there quoted from Theophrastus referred to a passage in *this* book, and was not rather a general reference to the frequently recurring Aristotelian law of the excluded middle.—On the other hand, it is singular that while the Π. ἑρμην. is never cited or referred to in any of Aristotle's books (cf. BONITZ, *Ind. Ar.* 102, a, 27), it cites not only the *First Analytic* (c. 10, 19, b, 31: *Anal.* 46, 51, 6, 36) and the *Topics* (c. 11, 20, 6, 26: *Top.* ix. 17, 175, b, 39), but also the Π. ψυχῆς (c. 1, 16, a, 8), and that for a proposition which neither the ancient opponents of Andronicus nor modern scholars have been able to find in it (cf. BONITZ, *Ind. Ar.* 97, b, 49, whose suggestion, however, is not satisfactory). Its remarks on Rhetoric and Poetry (c. 4, 17, a, 5) have no relation to the corresponding treatises of Aristotle. It should be added that the work accords throughout with Aristotle's line of thought, but frequently enlarges in a didactic way on the most elementary points in a fashion which one would suppose Aristotle would not have found necessary at the date at which it must have been written, if by him. The question, therefore, is not only whether it is by Aristotle or by another, but whether it may not, as Grant suggests (*Ar.* 57), have been written out by one of his scholars from oral lectures in which the difficulties of beginners would naturally be kept in view.

[1] Syllogisms are dealt with by the Ἀναλυτικὰ πρότερα in two books, and scientific method by the Ἀναλ. ὕστερα, also in two. The fact that D. 49 and An. 46 give nine books to the Ἀναλ. πρότ. (though An. 134 repeats the title with two only) points probably only to a different division; but it is also possible that other tracts are included, for the ANON. *Schol. in Ar.* 33, b, 32 (cf. DAVID, *ibid.* 30, b, 4, PHILOP. *ibid.* 39, a, 19, 142, b, 38, and SIMPL. *Categ.* 4 ζ) says that Adrastus knew of forty books of Analytics, of which only the four which are extant were counted genuine.—That these are genuine is proved beyond doubt, both by internal evidence, by Aristotle's own references, and by the fact that his earliest pupils wrote works modelled on them (cf. p. 65, *supra*, and BRANDIS, *Rhein. Mus.* NIEBUHR and BR. i. 267). Thus we know

proof by probability,[1] and on fallacies and their dis-

of an Analytic by Eudemus (ALEX. *Top.* 70), and we have references to book i. of the Πρότερα ἀναλ. of Theophrastus (ALEX. *Anal. pri.* 39, b, 51, a, 131, b, *Schol.* 158, b, 8, 161, b, 9, 184, b, 36; SIMPL. *De Cœlo*, Schol. 509, a, 6). Alexander, in his commentary, quotes from both on numerous points in which they developed or improved Aristotle's 'Αναλ. πρότ. (cf. *Theophr. Fr.* [ed. Wimmer], p. 177 sq. 229; *Eudem. Fr.* [ed. Spengel], p. 144 sq.). For the *Second Analytic* the references are less copious; but we know of passages of Theophrastus through Alexander (ANON. *Schol. in Ar.* 240, b, 2, and *ap.* EUSTRAT. *ibid.* 242, a, 17), through THEMIST. *ibid.* 199, b, 46, and through PHILOP. *ibid.* 205, a, 46, and through an Anon. Schol. *ibid.* 248, a, 24, of a remark of Eudemus, all of which seem to refer to the *Second Analytic*. We know as to Theophrastus, not only from the form of the title of the 'Αναλ. πρότερα, but also from express testimony (*v.* DIOG. v. 42; GALEN, *Hippocr. et Pl.* ii. 2, vol. v. 213, and ALEX. *Qu. Nat.* i. 26) that he did write a *Second Analytic*, and it is probable that in that, as in the text, he followed Aristotle. Aristotle himself cites both *Analytics* under that name: *Top.* viii. 11, 13, 162, a, 11, b, 32; *Soph. El.* 2, 165, b, 8; *Rhet.* i. 2, 1356, b, 9, 1357, a, 29, b, 24, ii. 25, 1403, a, 5, 12; *Metaph.* vii. 12 *init.*; *Eth. N.* vi. 3, 1139, b, 26, 32; also *De Interpr.* 10, 19, b, 31; *M. Mor.* ii. 6, 1201, b, 25; *Eth. Eud.* i. 6, 1217, a, 17, ii. 6, 1222, b, 38, c. 10, 1227, a, 10; (cf. other references *ap.* BONITZ, *Ind. Arist.* 102, a, 30 sq). It is therefore the original title, and has always remained in common use, notwithstanding that Aristotle cites certain passages of the *First Analytic* with the word ἐν τοῖς περὶ συλλογισμοῦ (*Anal. post.* i. 3, 11, 73, a, 14, 77, a, 33), or that Alexander (*Metaph.* 437, 12, 488, 11, 718, 4) and Pt. 28 call the *Second Analytic* ἀποδεικτική, or that Galen (*De Puls.* iv. *fin.*, vol. viii. 765; *De Libr. Propr.* vol. xix. 41) chooses to substitute, as he says, for the common titles, the names Π. συλλογισμοῦ and Π. ἀποδείξεως; nor have we any right to name them on internal grounds (with GUMPOSCH, *Log. Ar.* 115) Π. συλλογισμοῦ and Μεθοδικά. Brandis justly remarks (*Ue. d. Ar. Org.* 261 sq.; *Gr.-röm. Phil.* ii. b, 1, 224, 275) that the *First Analytic* is far more carefully and evenly worked out than the *Second* (which Aristotle can hardly have considered as complete), and that the two books of the *First Analytic* do not appear to have been written together, but with an interval.

[1] Aristotle dealt with this subject in several books, no doubt in connection with his rhetorical teaching. We still have the *Topica* in eight books, of which, however, the last, and perhaps the third and seventh also, seem to have been worked out long after the others (*v.* BRANDIS, *Ue. d. Ar. Org.* 255; *Gr.-röm. Phil.* ii. b, 330). The genuineness of the work and of its name is established by citations in Aristotle himself (*De*

proof.[1] Besides these, which are the component parts of our *Organon*, we have also the names of a great

*Interpr.* 11, 20, b, 26; *Anal. pr.* i. 11, 24, b. 12; ii. 15, 17, 64, a, 37, 65, b, 16; *Rhet.* i. 1, 1355, a, 28, c. 2, 1356, b, 11, 1358, a, 29; ii. 22, 1396, b, 4, c. 23, 1398, a, 28, 1399, a, 6, c. 25, 1402, a, 36, c. 26, 1403, a, 32; iii. 18, 1419, a, 24). For the art of proof by probabilities Aristotle uses the term 'Dialectic' (*Top.* init., *Rhet.* init., etc.), and he refers to the *Topics* in a similar way as πραγματεία π. τὴν διαλεκτικὴν (*Anal. pri.* i. 30, 46, a, 30). It is probable, therefore, that by μεθοδικὰ (*Rhet.* i. 2, 1356, b, 19) he meant the *Topics*, which in the opening words announce as their object, μέθοδον εὑρεῖν, etc., and in which (i. 12, 105, a, 16; viii. 2 *init.*) the relative passage is to be found, rather than, as Heitz (p. 81 sq., *Fr. Hz.* 117) suggests, a lost work; cf. ROSE, *Ar. Libr. Ord.* 120; VAHLEN, *Wien. Akad.* xxxviii. 99; BONITZ, *Ztschr. Oesterr. Gymn.* 1866, 11, 774. It seems, also, that in several MSS. the *Topics* were headed with the title Μεθοδικὰ, so that an idea arose that they were distinct works. This idea has been attributed to Dionys. (*Ep. I. ad Amm.* 6, p. 729, on *Rhet.* i. 2), but he speaks only of ἀναλυτικὴ καὶ μεθοδικὴ πραγματεία, and does not specially include the *Topics* in the latter. But D. 52 inserts Μεθοδικὰ in eight books, and AN. 49, the like title including seven books, although both know the *Topics* as well. So Diog. (v. 29) distinguishes τά τε τοπικὰ καὶ μεθοδικά; and Simpl. (*Cat.* 16 a, *Schol.* 47, b, 40), after Porphyry, appears to regard the latter as belonging, and the former as not belonging, to the 'Hypomnematic' writings. In D. 81 we even find a second entry of Μεθοδικὸν α'.—The theory of Spengel (*Abh. d. Münchn. Akad.* vi. 497) that our text of the *Topics* contains grave *lacunæ* does not seem to be proved by the passages he quotes (*Rhet.* i. 2, 1356, b, 10; ii. 25, 1402, a, 34). As to the former, which refers to the *Topics* only for the difference between συλλογισμὸς and ἐπαγωγὴ (cf. BRANDIS, 'Ue. d. Rhet. Ar.' ap. *Philologus*, iv. 13), it is satisfied by *Top.* i. 1, 12. As to the second, which does not apply to *Top.* viii. 10, 161, a, 9 sq., the words καθάπερ καὶ ἐν τοῖς τοπικοῖς, etc., need not be taken as referring to a particular passage, but may be taken as meaning 'of objections there are in Rhetoric, as in Topics, many kinds,' *i.e.* in oratorical use as opposed to disputation,—a remark that might well be made even if these distinctions were not taken in the earlier book. For similar uses of ὥσπερ ἐν τοῖς τοπικοῖς, etc., cf. BONITZ, *Ind. Ar.* 101 b, 44 sq., 52 sq., and VAHLEN, *ut supra*, 140 (where the phrase in *Rhet.* ii. 25 is explained as meaning 'Instances are here used in the same way as in *Topics*, and those of four kinds,' etc.).

[1] The Π. σοφιστικῶν ἐλέγχων, or (as ALEX. *Schol.* 296, a, 12, 21, 29, and Boeth. in his translation have it) Σοφιστ. ἔλεγχοι. Waitz (*Ar. Org.* ii. 528), followed by Bonitz (*Ind. Ar.* 102, a, 49),

number of kindred writings: treatises on Knowledge and Opinion,[1] on Definition,[2] on Classification by Genera and Species,[3] on Opposition and Difference,[4] on Particular Kinds of Conceptions,[5] on Expression in Speech,[6] on Affirmation and Negation,[7] on Syllog-

shows that Aristotle in the *De Interpr.* c. 11, 20, b, 26, and *Anal. pri.* ii. 17, 65, b, 16, refers to passages of this work (*i.e.* c. 17, 175, b, 39, c. 30, and c. 5, 167, b, 21), under the name ἐν τοῖς Τοπικοῖς; that he reckons knowledge of fallacies as part of 'Dialectic' (*Soph. El.* c. 9 *fin.*, ch. 11 *fin.*; cf. *Top.* i. 1, 100, b, 23); and that c. 34 is the epilogue not only for these but for the whole science of 'Topics.' Again, however, Aristotle seems (in c. 2, 165 b, 8; cf. *Rhet.* i. 3, 1359, b, 11; cf. BRANDIS, *Gr.-röm. Phil.* ii. b, 148) to distinguish the two, in a way, however, which proves, not that the two were not meant to form a whole, but that the treatise on fallacies was composed later than the rest of the *Topics*. The lists of D. and An. do not name the Σοφ. ἐλ. (for that reading in AN. 125 is, as Rose shows, wrong), and yet give the Μεθοδικὰ only eight books, whereas PT. 29, separates them from the *Topics* (26 b); possibly, however, in D. 27, Π. ἐριστικῶν two books, and AN. 27, Π. ἐριστικῶν λόγων two books, are the same as our Σοφ. ἐλ.

[1] Π. ἐπιστήμης, D. 40; Π. ἐπιστημῶν, D. 26, AN. 25; Π. δόξης, AN. *App.* 162. The genuineness of the work is doubtful, because it is nowhere else referred to.

[2] To this subject refer several titles in PT.: *i.e.* No. 60, Ὁριστικά, four books (cf. DIOG. v. 50, for the same title in the list of Theophrastus' works); 63, on the objects of Definition, two books; 63 b, *De Contradictione Definitionum*; 63 c, *De Arte Definiendi*; 64, Πρὸς τοὺς ὁρισμούς, two books (cf. the same from Theophr., DIOG. v. 45), translated *De Tabula Definiendi*. As to the collections of definitions and divisions, cf. *infra*.

[3] Π. εἴδων καὶ γενῶν, D. 31; Π. εἰδῶν, AN. 28, otherwise unknown.

[4] As to the opposition of concepts there was a book Π. τῶν ἀντικειμένων, doubtless the same as Π. ἐναντίων (D. 30, AN. 32). Simplicius, in his commentary on the *Categ.* (v. *Ar. Fr.* 115–121, p. 1497, sq.; *Fr. Hz.* 119), gives us some further information as to this book and its casuistical discussions. Rose (*Ar. Ps.* 130) refers it to the age of Theophrastus. PT. 12 has Π. διαφορᾶς, four books.

[5] *De Relato* (Π. τοῦ πρός τι), six books (PT. 84).

[6] *De Significatione*, PT. 78; its Greek title is given as '*Garamkun*,' i.e. Γραμματικὸν or -ῶν. As to another related title, Π. λέξεως, cf. *infra*. PT. 54, *Partitio Conditionum quæ statuuntur in voce et ponuntur*, four books, may also have been a grammatical treatise.

[7] ALEX. *Metaph.* 286, 23, 680, a, 26, cites this simply as ἐν

isms,[1] and on subjects belonging to the sphere of Topics and Eristics.[2] Probably, however, the most

τῷ π. καταφάσεως; probably, however, it should be (like the corresponding, or possibly identical, work of Theophrastus, named by DIOG. v. 44) Π. καταφάσεως καὶ ἀποφάσεως.

[1] Συλλογισμῶν α′ β′ (D. 56, AN. 54); Συλλογιστικὸν καὶ ὅροι (D. 57; AN. 55: -κῶν ὅρων); Συλλογισμοὶ α′ (D. 48).

[2] To this category belong in the first place the treatises placed next to the Μεθοδικὰ in the lists: Τὰ πρὸ τῶν τόπων (D. 59, AN. 57); Ὅροι πρὸ τῶν τοπικῶν, 7 books (D. 55); Τοπικῶν πρὸς τοὺς ὅρους α′ β′ (D. 60, AN. 59, PT. 62 as three books named *Tabula definitionum quae adhibentur in Topica*, i.e. Πρὸς ὅρους τοπικῶν); *De Definiendo Topico* (*i.e.* 'On Definition in Topics,' PT. 61); Π. ἰδίων (D. 32); Π. ἐρωτήσεως καὶ ἀποκρίσεως (D. 44, AN. 44). Brandis, however, believes (*ut supra*) that these names indicate only particular parts of our *Topica*. He takes Τὰ πρὸ τῶν τόπων (elsewhere used for the *Categ.*; cf. p. 64, n. 1) to be the first book, which in fact we know to have been so called by some (ANON. *Schol. in Ar.* 252, a, 46); the Ὅρος τῶν τόπων [as Br. reads it] to be books 2–8; Τοπ. πρὸς τοὺς ὅρους, books 6–7; Π. ἰδίων, book 5; and Π. ἐρωτ. κ. ἀποκρ. book 8, as to which we learn from ALEX. *Schol.* 292, a, 14, that many named it so, and others again, with a reference to its first words, Π. τάξεως κ. ἀποκρίσεως. These suggestions seem to commend themselves: except that it is easier to suppose as to the seven books of Ὅροι πρὸ τῶν τόπων that the text of D. is wrong. The AN. gives instead two titles: 51, Ὅρων βιβλίον α′; 52, Τοπικῶν ζ′. Here it is natural to refer the Ὅροι to book 1, the first half of which (c. 1-11) consists in definitions and their explanation, and the seven *Topica* to books 2-8. We conjecture, therefore, in view of the fact that both lists have the number seven, that in D. also the Ὅροι was originally distinct from the *Topica*, and that his text read: Ὅροι πρὸ τῶν τοπικῶν α′: Τοπικῶν α′-ζ′. D. 65 and AN. 62 name also Ἐπιχειρημάτων α′ β′ (PT. 55, 39, B, 83, 1, B); D. 33; AN. 33, Ὑπομνήματα ἐπιχειρηματικὰ, 3 B; D. 70, AN. 65, Θέσεις ἐπιχειρηματικαὶ κε′; cf. also THEON, *Progymn.* p. 165 W. (*Rhet.* ed. Sp. II, 69), who ascribes to Aristotle and Theophrastus πολλὰ βιβλία θέσεων ἐπιγραφόμενα, described by ALEX. *Top.* 16, *Schol.* 254, b, 10, as containing τὴν εἰς τὰ ἀντικείμενα δι' ἐνδόξων ἐπιχείρησιν. (Πρὸς θέσιν ἐπιχειρεῖν means 'to develop the *pro* and *con* of a given proposition,' v. *Ind. Ar.* 282, b, 57, 283, a, 6: θέσεις ἐπιχειρηματικαὶ are therefore themes for dialectic development or dialectical exercises with an introduction to the way of working them out.)—The Ἐπιχειρήματα are no doubt identical with the Λογικὰ ἐπιχειρ. the second book of which is quoted by PHILOP. *Schol.* 227, a, 46, and the Ὑπομνήμ. ἐπιχειρ. with that which is cited simply as Ὑπομνήματα by DEXIPP. *Cat.* 40, *Schol.* 48, a, 4, and SIMPL. *Schol.* 47, b, 39 following Por-

ancient of these tracts were in reality productions of the Peripatetic school at dates subsequent to Aristotle's death.

Next to the *Topics* in order of subjects come the Rhetorical Works.[1] Some of these were written before the *Topics* in order of time; others only afterwards and at a long interval. Of the many books of Aristotelian or alleged Aristotelian origin which dealt with the theory of skilled speaking,[2] or treated

phyry. PT. gives three entries of 'amusmata' or 'ifumsmata' (= ὑπομνήματα), *i.e.* No. 69, 2 books; 82, 16 books; and 82, b, 1 book. The references in ATHEN. iv. 173, and xiv. 654 to Ἀρ. ἢ Θεόφραστος ἐν τοῖς ὑπομνήμασι are not to a defined book so named, but are vague and not to be identified. What relation the Προτάσεις named in PT. (No. 79 = 33[? 23] books, and No. 80 = 31 [? 7] books) bear to the Θέσεις ἐπιχ. we cannot say, but we also find two entries in D. (46 and 47), and one in AN. (38) of Προτάσεις α'. The Ἐπιχειρηματικοὶ λόγοι, cited by Aristotle in the opening of c. 2. Π. μνημ. is not a separate work (cf. THEM. 97, a, p. 241), but the first chapter of the work itself (449, b, 13 sq., 450, a, 30 sq., 450, b, 11 sq.; cf. BONITZ, *Ind. Ar.* 99, a, 38). Under the head of *Topics* fall also the Ἐνστάσεις, D. 35, AN. 36, PT. 55, b; the Προτάσεις ἐριστικαὶ δ', D. 47, AN. 44; Λύσεις ἐριστικαὶ δ', D. 28, AN. 29; and Διαιρέσεις σοφιστικαί, δ', D. 29, AN. 31.—As to the Ἐριστικοὶ λόγοι, cf. p. 68, n. 1 *fin.* A tract Παρὰ τὴν λέξιν, named by SIMPL. *Schol.* 47, b, 40, was doubted, as he says, even by the ancients (cf. *Ar. Fr.* 113, p. 1496; ROSE, *Ar. Ps.* 128; *Fr. Hz.* 116). It dealt probably (cf. *Soph. El.* 4) with the fallacies παρὰ τὴν λέξιν. AN. 196 names among the Pseudepigrapha a work Περὶ μεθόδου.

[1] Cf. *Rhet.* i, 1 *init.* c. 2, 1356, a, 25; *Soph. El.* 34, 184, a, 8.

[2] Besides the two extant works, this class includes primarily the Theodectean Rhetoric: *i.e.* D. 82 and AN. 74, Τέχνης τῆς Θεοδέκτου συναγωγὴ [? εἰσαγωγὴ] in one or three books. The extant *Rhetoric* alludes (iii. 9 *fin.*) to an enumeration ἐν τοῖς Θεοδεκτείοις, which must mean a work of Aristotle, and proves, even if *Rhet.* iii. be spurious, the existence of this book in early times. The compiler of the *Rhet. ad Alex.* 1. 1421, b, 1 makes Aristotle speak of ταῖς ὑπ' ἐμοῦ τέχναις Θεοδέκτῃ γραφείσαις; and this reference also must be at least anterior to Andronicus. The words leave it doubtful whether the writer meant a *Rhetoric* dedicated to Theodectes, or one written by Aristotle but published by Theodectes in his own name. Later classical writers several times attribute to the name 'Rhetoric of Theodectes' the

of the history of rhetoric,[1] or set out rhetorical

atter meaning, in itself most improbable (cf. Θεοδεκτικαὶ τέχναι, ANON. in *Ar. Fr.* 125, p. 1499, *Fr. Hz.* 125; QUINTILIAN, ii. 15, 10, gives this explanation with an '*ut creditum est*': VALER. MAX. viii. 14, 3 gives it more distinctly); or else they name Theodectes directly as the author (CIC. *Orat.* 51, 172, 57, 194; QUINTIL. iv. 2, 63: and later writers *ap.* ROSE, *Ar. Ps.* 141, *Ar. Fr.* 123; *Fr. Hz.* 124 sq.; compare the similar treatment of the title *Nicomachean Ethics* by Cicero and others, *de quo* p. 97 *inf.*; or else they ascribe to Aristotle *and* Theodectes the opinions they find in this book (DIONYS. *Comp. Verb.* 2, p. 8, *De Vi Demos.* 48, p. 1101; QUINTIL. i. 4. 18; *Ar. Fr.* 126). If it is genuine, which the *Fr.* at least give no reason to doubt, we should consider it certainly not as a work written *by* Theodectes and published by Aristotle after his death, but as a work of Aristotle dedicated *to* Theodectes, in which view, since that orator did not survive the date of Alexander's Eastern expedition, and had become known to Alexander through Aristotle (PLUT. *Alex.* 17 *fin.*), it would have been composed during the years of Aristotle's residence in Macedonia. The name Τέχναι (in the *Rhet. ad Alex.*; cf. ROSE, *Ar. Ps.* 139) seems to indicate that it had more than one book, though the plural Θεοδέκτεια (*Rhet.* iii. 9) would not necessarily do so. For further details *v.* ROSE, *Ar. Ps.* 135 sq., and HEITZ, 85 sq.—As to the remaining titles in our lists which relate to Rhetoric, the Τέχνη[ς] α' of D. 79, AN. 73 probably meant the extant *Rhet. ad Alex.* In D. 80 the MSS. vary between ἄλλη τέχνη and ἄλλη τεχνῶν συναγωγή. If the former is right it would mean a second recension of our *Rhetoric*: if the latter, a recension of the Τεχνῶν συναγωγή: in neither case would it imply separate works.—Of the special tracts, the Γρύλλος has been mentioned p. 58, n. 1, *supra*: probably AN. *App.* 153, Π. ῥητορικῆς is merely a duplicate of it. In the title, Π. λέξεως α' β' (D. 87, AN. 79, Π. λέξ. καθαρᾶς: cf. on a similar book by Eudemus, p. 698, n. 3) Brandis in the *Gr.-röm. Phil.* ii. b, 1. 79 detects book 3 of our *Rhetoric*, whose first twelve chapters deal with that subject. This is the more probable that D. 78 gives the *Rhetoric* only two books, although AN. 72 has three books. The others, *i.e.* D. 85, AN. 77, Π. μεγέθους α' (*de quo* cf. *Rhet.* i. 3, 1359, a, 16, ii. 18 sq. 1391, b, 31, 1393, a, 8); D. 88, AN. 80, Π. συμβουλίας [-ῆς] α' (v. *Ar. Fr.* 136, p. 1501, *Ar. Ps.* 148, *Fr. Hz.* 126): AN. *App.* 177, Π. ῥήτορος ἢ πολιτικοῦ: AN. *App.* 178, Τέχνη ἐγκωμιαστική, were doubtless all spurious, as was also the Μνημονικὸν (D. 117, AN. 109) which would be dealt with as an aid to Rhetoric. PT. 68, Παραγγέλματα seems to be the same as the Παραγγ. ῥητορικῆς attributed to Theophrastus by DIOG. v. 47, but was in any case not by Aristotle.

[1] An exposition of all the rhetorical theories (τέχναι) down to Aristotle's own time was given in the Τεχνῶν συναγωγὴ (D. 77, as two books: AN. 71, and PT.

examples,[1] we have only one preserved to us,[2] in which, however, we possess without doubt the most mature statement of his rhetorical doctrine. The *Rhetoric* addressed to Alexander is now universally admitted to be spurious.[3]

24, as one book), D. 89, Συναγωγῆς α' β', and D. 80, Ἄλλη τεχνῶν συναγωγή (if that is the right reading) seem to be duplicates only. We hear of it in CIC. *De Invent.* ii. 2, 6, *De Orat.* ii. 38, 160, *Brut.* 12, 48, etc.: v. *Ar. Fr.* 130–135, p. 1500; *Ar. Ps.* 145; *Fr. Hz.* 122. The same work or an abstract of it seems to be meant by Demetr. Magn. (*ap.* DIOG. ii. 104) by the title Ἐπιτομὴ ῥητόρων.

[1] Ἐνθυμήματα ῥητορικὰ α', D. 84, AN. 76; and Ἐνθυμημάτων διαιρέσεις α' (D. 84; AN. 88, miswritten Ἐνθ. καὶ αἱρέσεων). To the same class belonged AN. 127, Προοιμίων α'; but *l.* Παροιμιῶν, as in D. 138. With these should be reckoned the Χρεῖαι—a collection of striking remarks, like Plutarch's Apophthegms, quoted by STOB. *Floril.* 5, 83, 7, 30, 31, 29, 70, 90, 43, 140, 57, 12, 93, 38, 116, 47, 118, 29. But as a saying of Zeno the Stoic is quoted from it (57, 12), and as we can hardly credit Aristotle with such a collection of anecdotes, it must either be a forgery or else the work of a later writer of the same name, like the grammarian mentioned *ap.* DIOG. v. 35. Rose believes (*Ar. Ps.* 611) that Ἀριστοτέλους is a misreading for Ἀρίστωνος. The same book seems to be what is meant in Stob. (38, 37, 45, 21) by the citation: ἐκ τῶν κοινῶν Ἀριστοτέλους διατριβῶν. See its *Fr. ap.* ROSE, *Ar. Ps.* 611, and *Fr. Hz.* 335.—The two orations, Ἐγκώμιον λόγου and Ἐγκώμιον πλούτου, are counted as pseudepigrapha in AN. 190, 194. The various proverbs and apophthegms quoted from Aristotle (ROSE, *Ar. Ps.* 606 sq.; *Fr. Hz.* 337 sq.) are collected from different sources.

[2] *I.e.* the three books of the *Rhetoric*. The date of its composition must be the last residence of Aristotle at Athens; cf. BRANDIS in 'Ar. Rhet.' *Philol.* iv. 8. That it has suffered interpolations and transpositions (*e.g.* in book ii. c. 18–26 ought to precede c. 1–17) was proved by SPENGEL, *Abh. d. Münchn. Akad.* vi. 483, followed by VAHLEN, 'Z. Krit. Ar. Schr.' *Wien. Akad.* xxxviii. 92, 121. The genuineness of book iii. has been questioned by SAUPPE, *Dionys. u. Ar.*, Gött. 1863, p. 32; ROSE, *Ar. Ps.* 137 n.; HEITZ, p. 85, 89; SCHAARSCHMIDT, *Samml. Plat. Schr.* 108, whose view has been followed in ZELLER, *Plato*, p. 55.

[3] This work was known to the author of our earliest list (*v.* D. 79, but its authenticity is not to be thought of. SPENGEL (Συναγ. τεχν. 182, ANAXIM. *Ars Rhet.* Proleg. ix. sq., cf. 99 sq.) attributes it, excepting the first and last chapters, to Aristotle's contemporary Anaximenes of Lampsacus. This suggestion, however, is very questionable; cf. ROSE, *Ar. Lib. Ord.* 100; KAMPE, in the *Philol.* ix. 106 sq. 279 sq. For, apart

Of the writings devoted to the development of his philosophic system, the first place is given to collections of Definitions [1] and Divisions [2]—regarded as aids to

from the arbitrariness of the separation of the part attributed to Anaximenes from the rest, the influence of the school of Aristotle betrays itself throughout, not only in the persistence of a method of didactic definitions and divisions, but also in the tenor of particular passages. Cf., *e.g.*, c. 2 *init.* (with *Rhet.* l. 3); c. 3, 1424, a, 12–19 (*Polit.* vi. 4, 1318, b, 27–38); c. 5, 1427, a, 30 (*Eth. N.* v. 10, 1135, b, 11 sqq., *Rhet.* i. 13, 1374, b, 6); c. 8, 1428, a, 19 sqq. (*Rhet.* ii. 25, 1402, b, 12 sqq.); c. 8, 1428, a, 25 (*Anal. pr.* ii. 27 *init.*); c. 9 *init.* (*Rhet.* i. 2, 1357, b, 28); c. 12 *init.* (*Rhet.* ii. 21, 1394, a, 22); and the distinction of ἐνθύμημα and γνώμη in c. 11 sq., though differently put, is of Aristotelian origin (cf. *Rhet.* ii. 21, 1394, a, 26); c. 17 (*Rhet.* i. 15, 1376, b, 31 sq.); c. 28 *init.* 29 *init.* (*Rhet.* iii. 9, 1410, a, 23).

[1] D. 64, AN. 61, Ὁρισμοί, 13 books: PT. 59: Ὅροι, 16 books, was certainly a later work of the School, analogous to the Platonic *Definitiones*. As to the other title, AN. 51, Ὅρων βιβλίον α′, cf. p. 71, n. 2, *supra*.

[2] Besides the 'Platonic Divisions' mentioned p. 63, n. 2, the lists name the following of this class: D. 42, Διαιρέσεις ιζ′ [AN. 41, Π. διαιρέσεων]; D. 43, AN. 42, Διαιρετικῶν α′ [Rose *leg.* -κὸν, as in the duplicate title D. 62]; PT. 52 gives the Διαιρέσεις (which might extend to any length according to the subjects chosen), 26 books. Whether the work was different from or identical (as seems more probable) with the Platonic Διαιρέσεις, it cannot be genuine. The quotation in ALEX. *Top.* 126, *Schol.* 274, a, 42, from Aristotle, ἐν τῇ τῶν ἀγαθῶν διαιρέσει (*Ar. Fr.* 110, p. 1496; *Fr. Hz.* 119), is satisfied by *M. Mor.* i. 2, 1183, b, 20 sq., cf. *Eth. N.* i. 12, 1101, b, 11, but may have found its way from that source into the Διαιρέσεις also.—Aristotle himself names an Ἐκλογὴ τῶν ἐναντίων, in *Metaph.* iv. 2, 1004, a, 1, where, after the remark that all oppositions finally go back to that of the ἓν or ὂν and its opposite, he adds: τεθεωρήσθω δ' ἡμῖν ταῦτα ἐν τῇ ἐκλογῇ τῶν ἐναντίων: in the parallel passage, xi. 3, 1061. a, 15, it is only ἔστωσαν γὰρ αὗται τεθεωρημέναι: cf. 1004, b, 33, πάντα δὲ καὶ τἆλλα ἀναγόμενα φαίνεται εἰς τὸ ἓν καὶ τὸ πλῆθος· εἰλήφθω γὰρ ἡ ἀναγωγὴ ἡμῖν. To the same refers also x. 3, 1054, a, 29: ἔστι δὲ τοῦ μὲν ἑνὸς, ὥσπερ καὶ ἐν τῇ διαιρέσει τῶν ἐναντίων διεγράψαμεν, τὸ ταὐτὸ καὶ ὅμοιον καὶ ἴσον, etc.; and the ταὐτὸν and ὅμοιον were themselves given in *Metaph.* iv. 2, 1003, b, 35, as examples of the εἴδη τοῦ ἑνὸς treated of in the Ἐκλογὴ τ. ἐν.: cf. also x. c. 4 *ad fin.* But in *Met.* xii, 7, 1072, b, 2 the words ἡ διαίρεσις δηλοῖ refer, not to a treatise, but to the division of two kinds of οὗ ἕνεκα given just before. Whether the reference to the Ἐκλογὴ τ. ἐν. indicates a separate treatise or a section of the work 'On the Good,' even Alexander did not know (cf. p. 61, n. 1); but since the subject

correct appreciation of the subject—but none of these appear to have been genuine. Most important, therefore, is the treatise *On the First Philosophy*[1]—a torso which is now arbitrarily bound up[2] with a number of other fragments, some genuine, some spurious, to form our *Metaphysics*.[3] Probably, however, the genuine

on which Aristotle cites the Ἐκλογὴ seems to have been dealt with in the second book Π. τἀγαθοῦ, it is probable that Aristotle had only that book in view.

[1] This is the name by which the work was originally cited; v. *De Motu Anim.* 6, 700, b, 8. That Aristotle himself so named it, is probable from *Metaph.* vi. 1, 1026, a, 15, 24, 30, xi. 4, 1061, b, 19; *Phys.* i. 9, 192. a, 35, ii. 2 *fin.*; *De Cœlo*, i. 8, 277, b, 10; *Gen. et Corr.* i. 3, 318, a, 6; *De An.* i. 1, 403, b, 16; for πρώτη φιλοσοφία we also find φιλοσοφία alone (*Metaph.* xi. 3, 4, 1061, b, 5, 25), θεολογικὴ (*Metaph.* vi. 1, 1026, a, 19, xi. 7, 1064, b, 3), ἡ περὶ τὰ θεῖα φιλοσοφία (*Part. An.* i. 5, 645, a, 4), σοφία (*Metaph.* i. 1, 2), and μέθοδος περὶ τῆς ἀρχῆς τῆς πρώτης (*Phys.* viii. 1, 251, a, 7), as Aristotle's expression for the subject of the book; and accordingly the book itself is also spoken of as σοφία, φιλοσοφία, θεολογία (ASCLEP. *Schol. in Ar.* 519, b, 19, 31). Cf. BONITZ, v. 5, *Arist. Metaph.* ii. 3 sq.

[2] We first find the name μετὰ τὰ φυσικὰ in Nicolaus of Damascus, who (acc. to the Schol. to THEOPH. *Metaph.* p. 323, Brand.) wrote a Θεωρία τῶν Ἀρ. μετὰ τὰ φυσικά: afterwards in PLUT. *Alex.* 7, and since then constantly. As this Nicolaus was a younger contemporary of Andronicus, the title (which never appears before, and is permanent after that date) may safely be referred to Andronicus himself, whose collection of Aristotle's writings alone explains it; for it means, not as SIMPL. *Phys.* 1, and the Neoplatonist HERENNIUS (*ap.* BONITZ, *Ar. Metaph.* ii. 5) supposed, the Supernatural, but that which in the order of doctrinal development, and of the works as collected, followed after the books on the Natural Sciences (cf. ALEX. *Metaph.* 127, 21; ASCLEP. *Schol.* 519, b, 19). It is named in the lists by AN. 111, AN. *App.* 154, and PT. 49. The latter has the usual Greek reckoning of thirteen books; the former has at 111 κʹ, at 154 ιʹ; which leaves it uncertain whether the editions referred to were incomplete, the one having only Α–Κ, and the other Α–Ι, or whether Κ and Ι are corruptions of Ν, *i.e.* Α–Ν.

[3] The question of the arrangement of our *Metaphysics* has been so far established by Brandis in 'Ar. Met.', *Abh. d. Berl. Akad.* 1834, Hist. Phil. Kl. p. 63–87, *Gr.-röm. Phil.* ii. b. 1, 541 sq., and by Bonitz (*Ar. Met.* ii. 3–35), that it is sufficient to refer the reader for earlier theories to the comprehensive account given by Bonitz at p. 30.

portions were brought into this connection immediately

The main body of the work, begun but not finished by Aristotle, is made up of books i., iii. (B), iv., vi.–ix. In these, after the critical and historical introduction in book i., one and the same inquiry, that as to Being as such, is methodically carried on, although it is neither brought to a conclusion, nor in parts submitted to final revision. Book x. seems to have been intended for a somewhat further advanced section of the same inquiry (cf. x. 2 *init.* with iii. 4, 1001, a, 4 sq., and x. 2, 1053, b, 16 with vii. 13), but as it is not brought by Aristotle into any express connection with book ix., it has almost the appearance of a separate treatise. Between these connected books there is inserted, in book v., an inquiry into the different meanings of thirty philosophical conceptions and terms, which stands in no connection with either the preceding or the following book. The Aristotelian authorship of this section is beyond doubt. Aristotle himself quotes it (in *Metaph.* vii. 1 *init.*, x. 1; cf. *Gen. et Corr.* ii. 10, 336, b, 29, *Phys.* i. 8, 191, b 29), with the words ἐν τοῖς περὶ τοῦ ποσαχῶς or π. τοῦ ποσ. λέγεται ἕκαστον. The view of Susemihl (*Genet. Entw. d. Plat. Phil.* ii. 536) that these citations are not satisfied by our book v., and that it is an un-Aristotelian tract which has taken the place of a genuine book with similar contents, is as decisively disproved as that of Rose (*Ar. Libr. Ord.* 154) that the book is entirely unworthy of Aristotle. The book is alluded to in other passages of the *Metaph.* (*e.g.* x. 4, 1055, a, 23, with which cf. v. 10, 1018, a, 25, and x. 6, 1054, b. 34, cf. v. 15, 1021, a. 25); and a discussion reserved in v. 7 *ad fin.* for another place is to be found in ix. c. 7. The tract Π. τοῦ ποσαχῶς, however, cannot have originally formed part of the work 'On the First Philosophy.' It must have been written much earlier—as is shown by the citations in the *Phys.* and in the *Gen. et Corr.*—and as an aid to the exact use and understanding of philosophic terms; and as such it appears in D. 36, and in An. 37 with the special addition Π. τ. ποσ. λέγ. ἢ τῶν κατὰ πρόσθεσιν. Nevertheless, Ar. *Met.* vi. 2 *init.*, alludes unmistakably to v. 7, 1017, a, 7, 22 sq., 31, in the words: ἀλλ' ἐπεὶ τὸ ὂν ἁπλῶς λεγόμενον λέγεται πολλαχῶς, ὧν ἓν μὲν ἦν τὸ κατὰ συμβεβηκός, etc., in a way which indicates, by the word ἦν, that the discussion had already come under the reader's notice. It appears, therefore, that Aristotle actually intended to incorporate our book v. or the contents of it in this part of his work, but never was able to finish the literary connection. As to book xi., the second half (c. 8, 1065, a, 26 sq.), is a compilation from the *Physics*, obviously not genuine. The first half exactly corresponds in content with books iii., iv., and vi.; and is therefore either an early sketch of the argument afterwards expanded in them, or else, as Rose (*Ar. Libr. Ord.* 156) supposes, a later abstract of them. A point in favour of the latter view is the objectionable recurrence,

seven times, of the particle γὲ μὴν, which is otherwise unknown in Aristotle's writing (EUCKEN, *De Ar. Dic. Rat.* i. 10; *Ind. Ar.* 147, a, 44 sq.) In view, however, of the arguments from the contents of the book themselves adduced in support of the other view by Bonitz (*Ar. Met.* ii. 15, 451), this peculiarity is not decisive, especially as the general style of the book has Aristotle's characteristics, and as similar phenomena as to particles are found elsewhere. [Thus τὲ . . τὲ occurs in Aristotle almost exclusively in the *Ethics* and *Politics* (EUCKEN, 16); δέ γε almost exclusively in the *Physics* (*ibid.* 33), in which also μέντοι, καίτοι, and τοίνυν are much commoner than in the other works (*ibid.* 35, 51): ἄρα recurs oftener in the later books of the *Metaph.* than in the earlier (*ibid.* 50): and among the ten books of the *Ethics*, there are many variants as between the three last and the sections i.–iv. or v.–vii., which again vary from one another in diction (*ibid.* 75 sq.). In this first half of book xi. five of the seven cases of γὲ μὴν occur in c. 2. Besides, γὲ is so often inserted by the copyists that it is always possible some early scribe is partly responsible.] Book xii. appears as an independent treatise, which refers to none of the preceding books, but seems to allude to the *Phys.* viii. 10 (esp. 267, b, 17 sq.) in c. 7, 1073, a, 5, and in c. 8, 1073, a, 32, to *Phys.* viii. 8 sq., and also to the *De Cœlo* ii. 3 sq. It is remarkable that while c. 6–10 develop in some detail the views of Aristotle as to the Godhead and other eternal Essences, c. 1–5 on the contrary give us the doctrine of changeable substances and their causes only in narrow compass, and in a style condensed often to the point of obscurity. This, with the fact that in these chapters the formula μετὰ ταῦτα [*sc.* λεκτέον] ὅτι occurs twice (*i.e.* 3 *init.*, and 1070, a. 4) indicates that it was not a book published by Aristotle, but a set of notes intended as a basis for lectures, in which many points were only hinted at in the the briefest way, with the knowledge that they would be made plain by oral development. The main theme of the lectures consisted of the points which in the second half of book xi. are treated with special care; while the more general metaphysical inquiries which were to serve as an introduction or basis for them were only lightly sketched. The matter the lectures dealt with was no doubt intended to be included in the work on the First Philosophy; and c. 6-10 are, as far as matter is concerned, exactly fitted to be the conclusion of it. C. 1–5, on the other hand, include nothing which is not contained in the earlier books. The polemic of Rose (*Ar. Libr. Ord.* 160) against this book—which, as will be seen in the next note, is specially well fortified with external evidence—has no value as against its Aristotelian authorship, but only as to its connection with our *Metaph.* The relation of the remaining two books to the rest is not clear; but there is no reason to hold with Rose (p. 157) that only xiv. is genuine. Aristotle must have originally meant to include them in the same book, for xiii. 2, 1076, a, 39, refers

after Aristotle's death.[1] Of the other writings mentioned which would have stood in close relation with

to iii. 2, 998, a, 7 sq., xiii. 2, 1076, b, 39, to iii. 2, 997, b, 12 sq., xiii. 10, 1086, b, 14 to iii. 6. 1003, a, 6 sq., and in viii. i. 1062, a, 22 he contemplates a treatment of Mathematics and the Ideas, which, as appears by xiii. *init.*, was intended to serve as an introduction to Theology (cf. BRANDIS, 542, 413 a). On the other hand, in xiv. 1, the obvious reference to x. 1 is not noticed, and vii. and viii. are not referred to at all in xiii. and xiv. (BONITZ, p. 26). It is inconceivable that Aristotle would have repeated a considerable section almost word for word, as is the case with the present text of i. 6, 9, and xiii. 4, 5. But book i., as a whole, must, as well as book iii., which cites it (iii. 2, 996, b, 8, cf. i. 2, 982, a, 16, b, 4, and 997, b, 3, cf. i. 6 sq.) be older than book xiii. It seems to me, therefore, the most probable conjecture that the argument in i. 9, which is apparently more mature than that in book xiii., was inserted on a second revision of book i., after Aristotle had decided to exclude books xiii. and xiv. from the scope of his main work on Metaphysics. Book ii. (α), a collection of three small essays, written as an introduction to Physics rather than to Metaphysics (v. c. 3 *Schol.*), is certainly not by Aristotle. The majority of the ancient commentators (οἱ πλείους) attributed it to a nephew of Eudemus, Pasicles of Rhodes (Schol. ap. *Ar. Opp.* 993, a, 29; Schol. in Ar. 589, a. 41; the so-called Philoponus [BEKKER'S *Anon. Urbin.*] in the Introd. to α, where the name is Pasicrates; and Asclep. *Schol.* 520 a, 6, except that he has erroneously transferred the story from α to A). That it was inserted after the other books were collected is clear, not only from its designation, but from the way in which it breaks the connection of the closely consecutive books A and B, for which reason many of the ancients wished to make it a preface to the *Physics*, or at least to book i. of the *Metaph.* (*Schol.* 589, b, 1 sq.) SYRIAN (*ap.* SCHOL. 849, a, 3) mentions that some critics proposed to reject A. These, like Asclepius, probably confused it with α: if not, Syrian was right in thinking their suggestion laughable.

[1] This seems probable (cf. ZELLER, *Abh. d. Berl. Akad.* 1877, Hist. Phil. Kl. 145) because of the circumstance that most of the genuine books of our *Metaphysics* were in use at the date of the oldest peripatetic books or fragments which we possess, and that they seem to have been gathered together in the same series of books with the rest at a very early date. Book i., as above stated, was not only the model for Theophrastus in book i. of his *History of Physics*, but has also left clear traces in what we know of Eudemus, and is the source of the point of view taken by the author of the treatise on Melissus, &c. Books iii. (B) and iv. are referred to by Eudemus, the fourth by Theophrastus also; book vi. by Theophrastus; book

the *Metaphysics*, only a few can be considered to be

vii. by Eudemus; book ix. by Theophrastus; book xii. by Theophrastus, Eudemus, the writer of the *Magna Moralia*, and the writer of the Π. ζῴων κινήσεως; book xiii. by Eudemus; book xiv. apparently by Theophrastus; and the fifth, the tract Π. τοῦ ποσαχῶς λεγόμενον, by Strato; cf. the following: (1) *Metaph.* 1, 981, a, 12 sq., EUDEM. *Fr.* 2, Speng.; (2) i. 3, 983, b, 20, THEOPHR. *Fr.* 40; (3) *ibid.* l. 30, EUD. *Fr.* 117; (4) i. 5, 986, b, 18; *De Melisso*, Xenoph. etc., see vol. i. 468, 484; (5) *ibid.* l. 21 sq., THEOPHR. *Fr.* 45; (6) *ibid.* l. 27, THEOPHR. *Fr.* 43, 44, EUD. *Fr.* 11, S. 21, 7; (7) i, 6, THEOPHR. *Fr.* 48; (8) i. 6, 987, b, 32, EUD. *Fr.* 11, S. 22, 7, Sp.; (9) i. 8, 989, a, 30, THEOPHR. *Fr.* 46; (10) iii. 2, 996, b, 26, iv. 3, 1005, a, 19, EUD. *Fr.* 4; (11) iii. 3, 999, a, 6, *Eth. Eud.* i. 8, 1218, a, 1; (12) iv. 2, 1009, b, 12, 21, THEOPHR. *Fr.* 42; (13) iv. 6, 1011, a, 12, c. 7, 1012, a, 20, THEOPHR. *Fr.* 12, 26; (14) v. 11, Strato *apud* SIMPL. *Categ. Schol. in Arist.* 90, a, 12–46; (15) vi. 1, 1026, a, 13–16, THEOPHR. *Fr.* 12, 1; (16) vii. 1, 1028, a, 10, 20, EUD. *Fr.* 5; (17) ix. 9, 1051, b, 24, THEOPHR. *Fr.* 12, 25; (18) xii. 7 *init.*, cf. c. 8, 1073, a, 22, *De Motu An.* 6, 700, b, 7; (19) xii. 7, 1072, a, 20, THEOPHR. *Fr.* 12, 5; (20) xii. 7, 1072, b, 24, c. 9, 1074, b, 21, 33, *Eth. Eud.* vii. 12, 1245, b, 16, *M. Mor.* ii. 15, 1213, a, 1; (21) xii. 10, 1075, b, 34, THEOPHR. *Fr.* 12, 2; (22) xiii. 1, 1076, a, 28, *Eth. Eud.* i. 8, 1217, b, 22; (23) xiv. 3, 1090, b, 13, THEOPHR. *Fr.* 12, 2. Since, therefore, the parts of our *Metaph.*, like book xii., which did not in fact belong to the main treatise, are in use as commonly and at as early a date as those parts which did, it must be conjectured that the whole was put together in the period immediately following Aristotle's death. This theory receives remarkable confirmation from the fact that already in the Π. ζῴων κινήσεως (c. 6, 700, b. 8), which belongs undoubtedly to the third century B.C., book xii. itself is quoted by the title reserved by Aristotle for his main treatise on Metaph.: i.e. ἐν τοῖς περὶ τῆς πρώτης φιλοσοφίας (cf. BONITZ, *Ind. Ar.* 100, a, 47 sq.; the suspicion thrown on the passage by KRISCHE, *Forsch.* 267, 3, and HEITZ, *V. S.* 182, is groundless). We may assume, then, with some probability that immediately after Aristotle's death the finished sections of the work on First Philosophy (*i.e.* books i., iii., iv., vi.–x.) were bound up with the other sketches and notes of a like character left by him (*i.e.* xi. first part, xii., xiii., and xiv.), and that at the same time book v. was inserted between iv. and vi.; but that book α, and the second half of xi., were first attached by Andronicus to this work, with which they were not connected either by origin or contents. Naturally, we cannot with certainty affirm by whom the first redaction was undertaken. But the statement of ALEX. (ap. *Metaph.* 760, b, 11 sq.), that it was Eudemus, deserves all consideration; while the different story told by ASCLEP. (*Schol. in Ar.* 519, b, 38 sq.) is open to the

genuine, and these must have belonged to Aristotle's earlier period.[1]

The works on Natural Philosophy form the largest bulk of all Aristotle's productions. We have first a series of important investigations which Aristotle himself connected together. They deal with the general basis and conditions of the material universe, of the earth and the heavenly bodies, of the elements with their properties and relations, and of meteorological phenomena. These are the *Physics*, [2] the two con-

gravest doubts. Cf. further, p. 155 sqq.

[1] Besides the Books on Philosophy (p. 55, n. 5, and 57), on the Good, and on the Ideas (p. 61, n. 1, 62, n. 1), the Περὶ εὐχῆς was probably genuine (*v.* p. 58, n. 1, fin.). The three books Π. τύχης (AN. *App.* 152) and the Μαγικὸς were not. The latter is named by Diog. (i. 1. 8, ii. 45), and was also evidently used by Plin. (*H. N.* xxx. 1, 2) as Aristotle's, but it is reckoned by AN. (191) among the Pseudepigrapha, and we know from Suidas ('Αντισθ.) that it was attributed sometimes to the Socratic Antisthenes, sometimes to the Antisthenes who was a Peripatetic of Rhodes *circa* 180 B.C. (*lege*, by Bernhardy's happy conjecture, 'Ροδίῳ for 'Ρόδωνι). On this book, vide *Ar. Fr.* 27–30, p. 1479; *Fr. Hz.* 66; HEITZ, *V. S.* 294, 8; ROSE, *Ar. Ps.* 50, who considers it to be a Dialogue.—Of the Θεολογούμενα, which was ascribed to Aristotle by Macrob. (*Sat.* i. 18), the 'Theogony' mentioned by Schol. Eur. Rhes. (28), and the τελεταὶ spoken of by Schol. Laur. in APOLL. RHOD. iv. 973 (*v.* these and other quotations *ap.* ROSE, *Ar. Ps.* 615; *Fr. Hz.* 347) seem to have formed part. It is referred by Rose to the hand of Aristocles of Rhodes, a contemporary of Strato; but this seems unlikely: cf. Heitz, *V. S.* 294. It cannot, however, have been a genuine work of Aristotle, and it seems to have contained, not philosophical inquiries as to the Godhead, but collections and probably explanations of myths and religious usages.—The Π. ἀρχῆς, from its position in the list of D. 41, seems rather to have been a metaphysical or physical tract than a political one, but we know nothing of it.—As to a 'Theology of Aristotle,' which originated in the Neoplatonic School and is preserved to us in an Arabic translation, *v.* DIETERCI, *Abh. d. D. morgenl. Gesellsch.* 1877, 1, 117.

[2] Φυσικὴ ἀκρόασις in 8 books (in AN. 148, *leg.* η' for ιη'), as its own MSS, and those of SIMPL. *Phys.* init., AN. 148, PT. 34, &c., name the treatise. Aristotle himself commonly calls only the first books φυσικὰ or τὰ περὶ φύσεως (*Phys.* viii. 1, 251, a, 8, cf. iii. 1,

nected works *On the Heavens* and *On Growth and*

viii. 3, 253, b, 7, cf. ii. 1, 192, b, 20, viii. 10, 267, b, 20, cf. iii. 4; *Metaph.* i. 3, 983, a, 33, c, 4, 985, a, 12, c, 7, 988, a, 22, c, 10, xi. 1, 1059, a, 34, cf. *Phys.* ii. 3, 7; *Metaph.* i. 5, 986, b, 30, cf. *Phys.* i. 2; xiii. 1, c, 9, 1086, a, 23, cf. *Phys.* i.). The later books he usually calls τὰ περὶ κινήσεως (*Metaph.* ix. 8, 1049, b, 36, cf. *Phys.* viii., vi. 6; *De Cœlo* i. 5, 7, 272, a, 30, 275, b, 21, cf. *Phys.* vi. 7, 238, a, 20, c, 2. 233, a, 31, viii. 10; *De Cœlo* iii. 1, 299, a, 10, cf. *Phys.* vi. 2, 233, b, 15; *Gen. et Corr.* i. 3, 318, a, 3, cf. *Phys.* viii.; *De Sensu* c, 6, 445, b, 19, cf. *Phys.* vi. 1; *Anal. post.* ii. 12, 95, b, 10). But in *Phys.* viii. 5, 257, a, 34 ἐν τοῖς καθόλου περὶ φύσεως refers to B. vi. 1, 4, *Metaph.* viii. 1, and φυσικὰ to B. v. 1; in *Metaph.* i. 8, 989, a, 24, xii. 8, 1073, 32, the phrase τὰ π. φύσεως refers not merely to the whole of the *Physica*, but also to other works on Natural Science (cf. BONITZ and SCHWEGLER *ad loc.*). For more general references see B, iii. 4, *De Cœlo* i. 6, 274, a, 21, ἐν τοῖς περὶ τὰς ἀρχὰς, B. iv. 12, vi. 1, *De Cœlo* iii. 4, 303, a, 23, περὶ χρόνου καὶ κινήσεως, and see IND. ARIST. 102, b, 18 sqq.—D. 90, 45 (115) names a Π. φύσεως and a Π. κινήσεως, but the former with three books only, and the latter with one (cf. p. 50, n. 1). SIMPL. (*Phys.* 190, a, 216, a, 258, b, and 320, a) says that Aristotle and his ἑταῖροι (*i.e.* Theophrastus and Eudemus) spoke of the first 5 books as Φυσικὰ or Π. ἀρχῶν φυσικῶν and of books vii. and viii. as Π. κινήσεως. No doubt Porphyry, however, was right (*ap.* SIMPL. 190, a) when he included book v. with book vi., with which it is so closely connected, under the name Π. κινήσεως. For though in the time of Adrastus (*ap.* SIMPL. 16, 2, a) many may have named i.–v. Π. ἀρχῶν [φυσικῶν], as others named the whole, while vi.–viii. bore the title Π. κινήσεως under which Andronicus (SIMPL. 216, a) also cited them, yet it cannot be shown that this was so in the earliest period. When Theophr. cited book v. as ἐκ τῶν φυσικῶν he may easily have meant not only this whole treatise but others also (*ut supra*: and cf. SIMPL. 216, a). When Damasus the biographer and follower of Eudemus (*ap.* SIMPL. 216, a, where it is impossible to read *Damascius* the Neoplatonist) speaks of ἐκ τῆς περὶ φύσεως πραγματείας τῆς 'Αρ. τῶν περὶ κινήσεως τρία, it does not follow that he means vi., vii., viii., and not rather v., vi., viii. (cf. ROSE, *Ar. Libr. Ord.* 198; BRANDIS, ii. b, 782). Indeed book vii. gave even ancient critics the impression of a section not properly fitted into the general connection, and SIMPL. (*Phys.* 242, a) tells us that Eudemus passed it over in his revision of the whole work. It need not on that account be classed as spurious (with ROSE, 199), but rather (with BRANDIS, ii. b, 893 sq.) as a collection of preliminary notes which do not belong to the Treatise on Physics. The text has taken on many interpolations and alterations from a paraphrase, known even in the time of Alexander and Simplicius (*v.* SIMPL. 245, a, b, 253, b, and cf. SPENGEL, *Abh. d. Münchn.*

*Decay*[1] and the *Meteorology*.[2] Connected with these leading works (so far as they are not to be classed as sections of them under special names, or as spurious),

*Akad.* iii. 313 sq.), but the original text is to be found in the smaller edition of Bekker and in that of Prantl. The Aristotelian origin of B. vi. c, 9, 10 is rightly maintained by Brandis (ii. b, 889) against Weisse.

[1] The Π. οὐρανοῦ in 4, and the Π. γενέσεως καὶ φθορᾶς in two books. The current division of these books, however, can hardly be derived from Aristotle, for books iii. and iv. of the Π. οὐρανοῦ are more nearly connected with the other treatise than are the earlier books. Aristotle recognises both by a short reference to their contents in the beginning of the *Meteorol.*, and by citing *De Cælo* ii. 7 in *Meteorol.* i. 3 . . . περὶ τὸν ἄνω τόπον . . . ἐν τοῖς περὶ τοῦ ποιεῖν καὶ πάσχειν διωρισμένοις; to the *Gen. et Corr.* i. 10 (not *Meteor.* iv.) *De Sensu* c, 3, 440, b, 3, 12 (ἐν τοῖς περὶ μίξεως); to the *Gen. et Corr.* ii. 2, *De An.* ii. 11, 423, b, 29, *De Sensu*, c, 4, 441, b, 12 (ἐν τοῖς περὶ στοιχείων). A work Π. οὐρανοῦ is ascribed by SIMP. (*De Cælo*, Schol. in Ar. 468, a, 11, 498, b, 9, 42, 502, a, 43) also to Theophrastus, who is said to have followed the lines of Aristotle's book. With this exception the earliest witnesses to the existence of the work are Xenarchus and Nicolaus of Damascus (*v.* BRANDIS, *Gr.-röm. Phil.* ii. b, 952), but there is no doubt of the authenticity either of these books or of the Π. γενέσεως. From STOB. *Ecl.* i. 486, 536 we cannot, with IDELER *Ar. Meteorol.* i. 415, ii. 199 (nor from CIC. *N. D.* ii. 15, and PLUT. *Plac.* v. 20) infer that the Π. οὐρανοῦ was originally more complete or existed in a recension different from ours.

[2] AN. *App.* 150, Μετεωρολογικά; PT. 37, Π. μετεώρων δ' ἢ μετεωροσκοπιά; PT. 76 do. with two books only. This work, as above observed, places itself, in its opening chapter, in immediate connection with the works last discussed; and its genuineness is beyond doubt. Aristotle himself does not name it (for *De Plant.* ii. 2, 822, b, 32 is a spurious book), but he frequently recalls its doctrines; cf. BONITZ, *Ind. Ar.* 102, b, 49. According to ALEX. *Meteor.* 91 and Olympiod. *ap.* IDELER, *Ar. Meteor.* i. 137, 222, 286, Theophrastus in his μεταρσιολογικά (DIOG. v. 44) seems to have imitated it. Ideler (*ibid.* i. vii. sq.) shows that it was known to Aratus, Philochorus, Agathemerus, Polybius, and Posidonius. Eratosthenes, however, seems not to have known it; cf. *ibid.* i. 462. Of the four books, the last seems from its contents not to have originally belonged to the same treatise. ALEX. (*Meteor.* 126, a) and AMMON. (*ap.* Olympiod. in IDELER, *Ar. Meteor.* i. 133) prefer to connect it with the Π. γενέσεως; but it is not adapted to that work either. Since it has all the appearance of being Aristotelian, and is cited by Aristotle (*Part. An.* ii. 2, 649, a, 33; cf. *Meteor.*

are a variety of other treatises on natural philosophy.[1]

iv. 10, *Gen. An.* ii. 6, 743, a, 6; cf. *Meteor.* iv. 6, 383, b, 9, 384, a, 33), it must be taken to be an isolated section, which was not contemplated, in this form, when the *Meteorology* was begun (v. *Meteor.* i. 1 *ad fin.*), but which in the end took the place of the further matter that remained to be dealt with at the end of book iii., which obviously does not itself bring the treatise to a close. As Bonitz (*Ind. Ar.* 98, b, 53) notices in criticising Heitz, this book (c. 8, 384, b, 33) cites *Meteor.* iii. 677, 378, a, 15 (cf. on this subject IDELER, *ibid.* ii. 347–360; SPENGEL, 'Ueb. d. Reihenfolge d. naturwissensch. Schriften d. Arist.,' *Abhandl. d. Münchn. Akad.* v. 150 sq.; BRANDIS, *Gr.-röm. Phil.* ii. b, 1073, 1076; ROSE, *Arist. Libr. Ord.* 197). The doubts alluded to by Olympiod. *ibid.* i. 131, as to book i. are unsupported; the reasons given by Ideler (i. xii. sq.) for holding that two recensions of the *Meteor.* existed in antiquity are not convincing. The points which he supposed to have been found in another edition of this, are for the most part referable to other works, and where that is not so (SEN. *Qu. Nat.* vii. 28, 1; cf. *Meteor.* i. 7, 344, b, 18) our informant may be in error. But it is possible that these points may have come from an edition that had been expanded by a later hand or largely added to; cf. BRANDIS, p. 1075.

[1] The *Physics* have the following titles: Π. ἀρχῶν ἢ φύσεως α' (AN. 21), ἐν τοῖς π. τῶν ἀρχῶν τῆς ὅλης φύσεως (THEMIST. *De An.* ii. 71, 76), ἐν τοῖς π. τῶν ἀρχῶν (*ibid.* 93), Π. κινήσεως (D. 45, 115; AN. 102, 1 B; PT. 17, 8 B; the same again as *Auscultatio physica*, at No. 34; and perhaps also as Π. ἀρχῆς at D. 41). In what relation the same work stands to the titles: Π. φύσεως (D. 90 as three books, AN. 81, as one); Φυσικὸν α' (D. 91); or Π. φυσικῶν α' (AN. 82) is not clear. AN. *App.* 170, PT. 85: Π. χρόνου might also be only an extract including *Phys.* iv. 10–14, though it is preferable to think of it as a special treatise by some of the Peripatetics. Aristotle himself refers with the words ἐν τοῖς π. στοιχείων in the *De An.* ii. 11, 423, b, 28, and the *De Sensu*, 4, 441, a, 12, to the *Gen. et Corr.* ii. 2 sqq. Whether in D. 39, AN. 35, the title Π. στοιχείων γ' only refers to this work (possibly in connection with *De Cælo* iii. and iv., cf. p. 50, n. 1; or with *Meteor.* iv., cf. *Fr. Hz.* 156), or whether it means a special collection of several Aristotelian tracts relating to the elements, or whether there was a separate treatise (which could not be considered genuine) must remain an open question.—So, again, as to the book Π. τοῦ πάσχειν ἢ πεπονθέναι (D. 25): Aristotle in *De An.* ii. 5, 417, a, 1, and in *Gen. Anim.* iv. 3, 768, b, 23 refers by the formula, ἐν τοῖς π. τοῦ ποιεῖν καὶ πάσχειν, to *Gen. et Corr.* i. 7 sq., a reference doubted by Trendelenburg (*De An.* ibid.) and by Heitz (*V. S.* 80), but which it seems impossible, on comparison of the passages, to reject (cf. with *Gen. An.* p. 324, a, 30 sq.; with *De An.* 416, b, 35, and 323, a, 10 sq.; with *De An.* 417

Another class of writings, less directly akin, are the

a, 1, τοῦτο δὲ πῶς δυνατὸν ἢ ἀδύνατον, εἰρήκαμεν, etc., and 325, b, 25, πῶς δὲ ἐνδέχεται τοῦτο συμβαίνειν, πάλιν λέγωμεν, etc.). It suggests itself, therefore, either to apply the title in DIOG. to this section only or to the whole of book i. If, however, a separate treatise is meant, then it seems more likely that it was analogous to the *Gen. et Corr.* than that (as TREND. *Gesch. d. Kategor.*, 130, supposes) it treated generally of the categories of Action and Passion.—With Physics also was connected the tract *De quæstionibus hylicis*, PT. 50, and perhaps also PT. 75, *De accidentibus universis*, both without doubt spurious. So must be also AN. *App.* 184, Π. κόσμου γενέσεως, which cannot have been written by Aristotle, who so decisively combats the idea of a beginning of the world. The book Π. κόσμου (which is not even known to our three lists) was written at the earliest 50–1 B.C.; cf. ZELLER, *Ph. d. Gr.* iii. a, 558. The so-called quotation from a work Π. μίξεως, given by Minoides Mynas, in his edition of Gennadius against Pletho (*Fr. Hz.* 157), belongs perhaps to the διαιρέσεις spoken of p. 75, n. 2.—Many of the books we hear of as related to the subject of the *Meteor.* seem to have been spurious. A work Π. ἀνέμων (ACHILL. TAT. *in Ar.* c. 33, 158 A; *Fr. Hz.* 350; ROSE, *Ar. Ps.* 622) was ascribed to Aristotle, probably by a confusion between him and Theophrastus (*de q. v.* DIOG. v. 42; ALEX. *Meteor.* 101, b, 106, a, etc.); and so with the Σημεῖα χειμώνων (D. 112, or *ap.* AN. 99, Σημασία[ι] χειμώνων, or in the title ap. *Ar. Opp.* ii. 973, Π. σημείων), for the *Fr.* of which v. *Ar. Fr.* 237 sq. 1521; *Fr. Hz.* 157; *Ar. Ps.* 243 sq. The Π. ποταμῶν (PS.-PLUT. *De Fluv.* c. 25 *ad fin.*; HEITZ, *V. S.* 297; *Fr. Hz.* 349) seems to have been a late compilation. Of much earlier date (according to Rose, either by Theophrastus or of his time) is AN. *App.* 159; PT. 22, Π. τῆς τοῦ Νείλου ἀναβάσεως, *de q.v.* ROSE, *Ar. Ps.* 239 sq.; *Ar. Fr.* p. 1520; *Fr. Hz.* 211. The treatises *De Humoribus* and *De Siccitate*, ap. PT. 73, 74, cannot be genuine, as they are mentioned nowhere else. As to the Π. χρωμάτων, well founded objections have been raised by Prantl (*Ar. ü. d. Farben*, Münch., 1849, p. 82; cf. 107, 115, 142, etc.).—Alex. in *Meteor.* 98, b, and Olympiod. in *Meteor.* 36, a (*ap.* IDELER, *Ar. Meteor.* i. 287 sq.) allege that Aristotle wrote a book Π. χυμῶν, but neither seems to have known it. So Michael of Ephesus, *De Vita et M.* 175, b, remarks that Aristotle's Π. φυτῶν καὶ χυλῶν was lost, so that it was necessary to rely on Theophrastus. Aristotle himself alludes in *Meteor.* ii. 3, 359, b, 20, to some more extended inquiry into the qualities of things relating to the sense of taste; and since in the late *De Sensu*, c. iv. *ad fin.*, further inquiries on the same subject are projected as part of the work on Plants, it is a question whether we should refer the allusion in *Meteor.* ii. to a separate book Π. χυμῶν, and not consider it rather as a later interpolation referring to *De Sensu*'

mathematical, mechanical, optical, and astronomical tracts.[1]

c. 4, and *De An.* ii. 10.—Aristotle contemplates at the end of *Meteor.* iii. a work on Metals, and the commentators mention a μονόβιβλος π. μετάλλων. See SIMPL. *Phys.* 1, a; *De Cœlo*, Schol. in Ar. 468, b, 25; DAMASC. *De Cœlo*, ibid. 454, a, 22; PHILOP. *Phys.* a, 1, m. (who, however, on the *Meteorologia*, i. 135 id., speaks as if he did not know such a tract); OLYMPIOD. *in Meteor.* i. 133 id. Some, with more reason, attribute the book to Theophrastus (POLLUX, *Onomast.* vii. 99, x. 149; cf. DIOG. v. 44; THEOPHR. *De Lapid.* init.; ALEX. *Meteor.* 126, a, ii. 161 Id.; and see ROSE, *Arist. Ps.* 254 sq., 261 sq.; *Ar. Fr.* 242 sq. S. 1523; *Fr. Hz.* 161). Against the idea that *Meteor.* iii. 7, 378, b, 5; iv. 8, 384, b, 34, refers to the Π. μετ. (on which see HEITZ, p. 68), see BONITZ, *Ind. Ar.* 98, b, 53. We know nothing of the *De metalli fodinis* (Hadschi Khalfa, *ap.* WENRICH, *De Auct. Gr. Vers. Arab.* 160). The tract on the Magnet (Π. τῆς λίθου, D. 125; AN. 117; ROSE, *Ar. Ps.* 242; *Fr. H.* 215) was probably spurious. That *De lapidibus*, which was much used by the Arabs (HADSCHI KH. *loc. cit.* 159; see MEYER, *Nicol. Damasc. De plantis*, praef. p. xi.; ROSE, *Ar. Libr. Ord.* 181 sq., *Ar. Ps.* 255 sq.), was certainly so.

[1] Μαθηματικὸν α′ (D. 63; AN. 53), Π. τῆς ἐν τοῖς μαθήμασιν οὐσίας (AN. *App.* 160), Π. μονάδος (D. 111; AN. 100), Π. μεγέθους (D. 85; AN. 77, unless this was a Rhetorical tract; see p. 72, 2 *ad fin.*). The Π. ἀτόμων Γραμμῶν (*Ar. Opp.* ii. 968 sq.), which in our lists is only named by PT. 10, and never cited by Aristotle himself, was also ascribed with much likelihood to Theophrastus by SIMPL. *De Cœlo*, Schol. in Ar. 510, b, 10, and PHILOP. *Gen. et Corr.* 8 b, whereas PHILOP. ad *Gen. et Corr.* 37, a, and ad *Phys.* m. 8, treats it simply as by Aristotle. Its genuineness is doubted also by Rose (*Ar. Libr. Ord.* 193). The reference in EUTOC. ad *Archim. de Circ. Dimens. proœm.* does not mean that Aristotle wrote a book on squaring the circle; the allusion is merely to *Soph. El.* 11, 174, b, 14 or *Phys.* i. 2, 185, a, 16. Without further explanation Simpl. (*Categ.* 1 ζ) names Aristotle's γεωμετρικά τε καὶ μηχανικὰ βιβλία; but the extant Μηχανικὰ (in D. 123; AN. 114, called μηχανικὸν [-ῶν], but more correctly *ap.* PT. 18, Μηχ. προβλήματα) are certainly not from the hand of Aristotle; cf. ROSE, *Ar. Libr. Ord.* 192.—D. 114, Ὀπτικὸν α′ [-ῶν, *sc.* προβλημάτων]; AN. 103, Ὀπτικὰ βιβλία; cf. DAVID *in Categ* Schol. 25, a, 36; ANON. *Proleg. in Metaph.* ap. ROSE, *Ar. Ps.* 377, and *Fr. Hz.* 215; Ὀπτικὰ προβλήμ., *V. Marc.* p. 2 and p. 8. It is clear from a reference in a Latin translation of Hero's κατοπτρικὰ (*circ.* 230 B.C.) *ap.* ROSE, *Ar. Ps.* 378; *Ar. Fr.* 1534; *Fr. Hz.* 216, and from the Pseud. Ar. *Problems*, xvi. 1 *ad fin.*, that such a book had currency under Aristotle's name at an early date, Its genuineness is not, however, assured, though it is very pro-

Next to the *Physics* and the related treatises come the numerous and important works dealing with life. Some of these are descriptive, others are inquiries. To the former class belong the *History of Animals* [1] and the

bable that among Aristotle's genuine *Problems* there were some in Optics The *De Speculo*, attributed by Arabic and Christian Middle-Age writers to Aristotle, appears to be only Euclid's Κατοπτρικὰ (ROSE, *Ar. Ps.* 376).—D. 113; AN. 101, report an Ἀστρονομικὸν; and Aristotle himself refers to such a work in *Meteor.* i. 3, 339, b, 7 (ἤδη γὰρ ὦπται διὰ τῶν ἀστρολογικῶν θεωρημάτων ἡμῖν), *ibid.* c. 8, 345, b, 1 (καθάπερ δείκνυται ἐν τοῖς περὶ ἀστρολογίαν θεωρήμασιν), and *De Cœlo*, ii. 10, 291, a, 29 (περὶ δὲ τῆς τάξεως αὐτῶν etc. ἐκ τῶν περὶ ἀστρολογίαν θεωρείσθω· λέγεται γὰρ ἱκανῶς); SIMPL. on the *De Cœlo*, Schol. 497, a, 8, appears to have the same in his mind. The existence of the book is accepted, of modern scholars, by Bonitz (*Ind. Ar.* 104, a, 17 sq.) and Prantl (*ad* Π. οὐρ. p. 303); while Heitz (*S. V.* p. 117) thinks it probable, though in *Fr. Hz.* 160 he refuses to decide. Blass (*Rhein. Mus.* xxx. 504) applies the references to writings by other hands. Ideler (*Ar. Metaph.* i. 415) assumes a varying recension of the *De Cœlo*, which has no probability. It does not seem probable that this Astronomical—or as Aristotle would have called it (*v.* HEITZ, *ibid.*) Astrological—work took the form of Problems, since Aristotle repeatedly speaks of θεωρήματα. Not to it, but to late interpolated tracts, are the titles to be referred which are mentioned by Hadschi Khalfa (p. 159–161): *De siderum arcanis*, *De sideribus eorumque arcanis*, *De stellis labentibus*, and *Mille verba de astrologia judiciaria.* As to the accuracy of the other mathematical and related writings, we can decide nothing. The attempt of Rose (*Ar. Libr. Ord.* 192) to prove that *none* of them can be Aristotle's does not succeed.

[1] Π. τὰ ζῷα ἱστορία (Π. ζῴων ἱστορίας ι', AN. *App.* 155; the same is meant by D. 102 and AN. 91, Π. ζῴων, nine books, and by PT. 42). The Arabic writers count ten, fifteen, or nineteen books, and had no doubt expanded the extant text by various added tracts; cf. WENRICH, *De Auct. Græc. Vers.* 148. Aristotle quotes it by various names: ἱστορίαι [-ία] π. τὰ ζῷα (*Part. Anim.* iii. 14, 674, b, 16; iv. 5, 680, a, 1; iv. 8 *ad fin.*; iv. 10, 689, a, 18; iv. 13, 696, b, 14; *Gen. An.* i. 4, 717, a, 33; i. 20, 728, b, 13; *Respir.* c. 16, *init.*); ἱστορίαι π. τῶν ζῴων (*Part. Anim.* ii. 1, *init.* c. 17, 660, b, 2; *Gen. Anim.* i. 3, 716, b, 31; *Respir.* c. 12, 477, a, 6), ζωϊκὴ ἱστορία (*Part. Anim.* iii. 5, *fin.*), ἱστορία φυσικὴ (*Part. Anim.* ii. 3, 650, a, 31; *Ingr. An.* c. 1, *fin.*), and simply ἱστορίαι or ἱστορία (*De Respir.* 16, 478, b, 1; *Gen. Anim.* i. 11, 719, a, 10; ii. 4, 740, a, 23; c. 7, 746, a, 14; iii. 1, 750, b, 31; c. 2, 753, b, 17; c. 8 *fin.*; c. 10 *fin.*; c. 11 *fin.*

In its contents, however, it is rather a Comparative Anatomy and Physiology than a description of animals. As to the plan of it, cf. J. B. MEYER, *Ar. Thierk.* 114 sq. Its genuineness is beyond question, though as to the tenth book, it must be taken to be, not merely with Spengel (*De Ar. Libro X Hist. Anim.* Heidelb. 1842), a retranslation of a Latin translation of a section written by Aristotle to follow book vii., but wholly spurious; with Schneider (iv. 262, i. xiii.), Rose (*Ar. Libr. Ord.* 171), and Brandis (*Gr.-röm. Phil.* ii. 6, 1257). Apart from anything else the un-Aristotelian assumption of a female semen would prove this of itself. No doubt this book is the same as that in D. 107, AN. 90, ὑπὲρ [περὶ] τοῦ μὴ γεννᾷν. As to Alexander's reported assistance for the whole work, cf. p. 29 sq. *supra*; and as to the sources used by Aristotle, cf. ROSE, *Ar. Libr. Ord.* 206 sq.—Besides this History of Animals, there were known to the ancients various similar works. Athenæus, for example, uses one work different (as is clear from his own words) from our *Hist. An.*, under the names ἐν τῷ π. Ζῴων, ἐν τοῖς π. Ζ. (ROSE, *Ar. Ps.* 277, and HEITZ, 224, unnecessarily read Ζωϊκῶν), ἐν τῷ π. Ζῳϊκῶν, ἐν τῷ ἐπιγραφομένῳ Ζῳϊκῷ, ἐν τῷ π. Ζῴων ἢ [καὶ] Ἰχθύων, ἐν τῷ π. Ζῳϊκῶν καὶ Ἰχθύων, ἐν τῷ π. Ἰχθύων; but at the same time he curiously cites our *Hist. An.* v., as πέμπτον π. ζῴων μορίων (see the notes of Schweighäuser on the passages in question; e.g. ii. 63, b; iii. 88; c. vii. 281 sq., 286, b; and the Index, and see ROSE, *Ar. Ps.* 276 sq.; *Ar. Fr.* Nr. 277 sq.; HEITZ, 224 sq.; *Fr. Hz.* 172). So CLEMENS, *Pædag.* ii. 150, C (cf. ATHEN. vii. 315, e) seems to refer to the same lost work, and Apollonius (*Mirabil.* c. 27) mentions it, distinguishing it expressly from the extant *Hist. An.* (Π. ζῴων). Parts of this lost work are probably indicated by the names: Π. θηρίων (ERATOSTH. *Catasterismi*, c. 41, and therefrom the Scholion in GERMANICUS, *Aratea Phænom.* v. 427, Arat. ed. BUHLE, ii. 88); Ὑπὲρ τῶν μυθολογουμένων ζῴων (D. 106; AN. 95); ὑπὲρ τῶν συνθέτων ζῴων (D. 105; AN. 92); Π. τῶν φωλευόντων (PTOL. 23, '*fari tufulin*'). DIOG. v. 44 attributes a treatise of that name, doubtless the same, to Theophrastus, from which come the *Fragm.* 176–178, Wimm. *apud* ATHEN. ii. 63; c. iii. 105 d; vii. 314, b. To it also refers the notice in PLUT. *Qu. Conv.* 8, 9, 3, which ROSE, *Ar. Fr.* 38, refers to the Dialogue 'Eudemus,' and HEITZ, *Fragm. Ar.* 217, to the ἰατρικά. The citations from this and similar works, sometimes under the name of Aristotle, sometimes of Theophrastus, will be found in ROSE, *Ar. Ps.* 276–372; *Ar. Fr.* 257–334, p. 1525 sq.; *Fr. Hz.* 171 sq. PLIN. (*H. Nat.* viii. 16, 44) says Aristotle wrote about fifty, and ANTIGONUS (*Mirab.* c. 60 [66]) says about seventy books on Animals. Of all these it is clear that none but the first nine of our *Hist. An.* were genuine. The work which Athen. used (which is not Aristotle's style, to judge by the *Fr.*) seems to have been a compilation from them and other sources, belonging, in view of the passage quoted from Antigonus, to the third century B.C.

*Anatomical Descriptions.*[1] The latter class begin with the three books *On the Soul*,[2] on which several other anthropological tracts follow.[3] The further investi-

[1] The Ἀνατομαὶ (seven books, in D. 103, AN. 93) are very often cited by Aristotle (cf. BONITZ, *Ind. Ar.* 104, a, 4, and *Fr. Hz.* 160), and it is not possible with Rose (*Ar. Libr. Ord.* 188) to explain these references away. We know from *H. An.* i. 17, 497, a, 31, iv. 1, 525, a, 8, vi. 11, 566, a, 15; *Gen. An.* ii. 7, 746, a, 14; *Part. An.* iv. 5, 680, a, 1; and *De Respir.* 16, 478, a, 35, that the Ἀνατομαὶ were furnished with drawings, which were perhaps the principal point of the work. The Schol. on *Ingr. An.* 178, b (after Simpl. *De Anima*), can hardly have cited the work from his own knowledge. Apuleius (*De Mag.* c. 36, 40) talks of a work of Aristotle, Π. ζῴων ἀνατομῆς, as universally known; but it is seldom mentioned elsewhere, and Apuleius himself possibly meant the Π. ζῴων μορίων. The extract from the work—ἐκλογὴ ἀνατομῶν, D. 104, AN. 94, APOLLON. *Mirab.* c. 39—was certainly not by Aristotle. Heitz (*Fr.* 171) rightly rejects Rose's opinion (*Ar. Ps.* 276) that the ἀνατομαὶ were one work with the ζῳϊκα. AN. 187 gives an ἀνατομὴ ἀνθρώπου among the *Pseudepigr.* Aristotle did no human anatomy (cf. *H. An.* iii. 3, 513, a, 12, i. 16 *init.* and see LEWES, *Aristotle*).

[2] The Π. ψυχῆς is often cited by Aristotle in the lesser treatises presently to be mentioned (BONITZ, *Ind. Ar.* 102, b, 60 sq.), and in the *Gen. An.* ii. 3, v. 1, 7, 736, a, 37, 779, b, 23, 786, b, 25, 288, b, 1, *Part. An.* iii. 10, 673, a, 30, *De Interpr.* i. 16, a, 8, *De Motu An.* c. 6 *init.* and c. 11 *ad fin.*, and must therefore be earlier than these books. Ideler (*Ar. Meteor.* ii. 360) is not correct in saying that the reverse follows from the end of *Meteor.* i. 1. The words in the *Ingr. An.* c. 19 *ad fin.* which name this book as only projected and the Π. ζῴων μορίων as in existence, are (with Brandis ii. 6, 1078) to be considered as a gloss only. Of its three books the first two seem in a more complete state than the third. Torstrik, in the preface to his edition of 1862, has shown that there are preserved traces of a second recension of book ii., and that confusing repetitions have crept into the present text of book iii., through a combination of two recensions made before the date of Alexander of Aphrodisias; and the same appears to be true of book i. also. Singularly enough D. and AN. do not mention the work; but PT. 38 has it; whereas D. 73 and AN. 68 give Θέσεις π. ψυχῆς α΄. The *Eudemus* ought also to be reckoned with Aristotle's psychology: see the accounts of it at pp. 55, n. 4, 56, n. 2, *supra*.

[3] To this class belong the following extant treatises, which all relate to the κοινὰ σώματος καὶ ψυχῆς ἔργα (*De An.* iii. 10, 433, 20):—(1) Π. αἰσθήσεως καὶ αἰσθητῶν. Its proper name probably was Π. αἰσθήσεως only (cf. IDELER, *Ar. Meteor.* i. 650, ii. 358); and it is cited by Aristotle in the Π. ζ. μορίων and the Π. ζ.

*γενέσεως* (BONITZ, *Ind. Ar.* 103, a, 8 sq.), *De Memor.* c. 1, *init.*, *De Somno* 2, 456, a, 2 (*De Motu Anim.* c. 11 *fin.*), and announced as coming in the *Meteor.* i. 3, 341, a, 14.—TRENDELENBURG, *De An.* 118 (106) sq. (*contra* ROSE, *Ar. Libr. Ord.* 219, 226; BRANDIS, *Gr.-röm. Phil.* ii. b, 2, 1191, 284; BONITZ, *Ind. Ar.* 99, b, 54, 100, b, 30, 40) believes that the Π. *αἰσθ.* is mutilated, and that it is a separated section of it which is preserved as the *ἐκ τοῦ περὶ ἀκουστῶν*, *Ar. Opp.* ii. 800 sq. It is certain that some of the references in later writings cannot be satisfactorily verified in our present text. According to the *Gen. An.* v. 2, 781, a, 20, and *Part. An.* ii. 10, 656, a, 27, it was explained *ἐν τοῖς περὶ αἰσθήσεως* that the canals of the organs of sense started from the heart; but, on the contrary, in the only applicable passage of the extant treatise (c. 2, 438, b, 25) we are told that the organs of smell and sight are seated near the brain, out of which they are formed, but those of taste and touch in the heart. It is not until the *De Vita et M.* c. 3, 469, a, 10 that he adds that the heart is the seat of perception for the other senses also (only not *φανερῶς* as for these); and here l. 22 sq. refers to the passage of the Π. *αἰσθ.* just cited (for it is only there, and not in the *Part. An.* ii. 10, as cited *Ind. Ar.* 99, b, 5, that the different positions are assigned to the organs of sense). From these facts it does not follow that a section dealing with this point is omitted in our text, but rather that the words *ἐν τοῖς π. αἰσθ.* in *Gen. An.* v. 2 and *Part. An.* ii. 10 are to be taken in a wide sense, as including all the anthropological treatises which are introduced by Π. *αἰσθ.* 1 *init.*, as by a common preface.—The same explanation will account for the statement in *Part. An.* ii. 7, 653, a, 19 that Aristotle would speak *ἔν τε τοῖς π. αἰσθήσεως καὶ π. ὕπνου διωρισμένοις* of the causes and effects of sleep. The subject is to be found only *De Somno*, 2, 3, 458, a, 13 sq, and no fitting place for its introduction can be found in our Π. *αἰσθ.* Probably it did not occur in the original text either; and we are to understand the reference as indicating by Π. *αἰσθ.* the general, and by Π. *ὕπνου* the particular description of one and the same treatise (in which view *τε* should perhaps be dropped).—So finally in *Gen. An.* v. 7, 786, b, 23, 788, a, 34 there are allusions to investigations as to the voice *ἐν τοῖς π. ψυχῆς* and *π. αἰσθήσεως*. These are to be referred chiefly to *De An.* ii. 8, and secondarily to c. 1, 437, a, 3 sq., 446, b, 2 sq., and 12 sq., whereas the beginning of c. 4 of the *De An.* itself tells us that it was beyond the plan of that treatise to give any detailed account of voice and tone, such as we find in the extant fragment Π. *ἀκουστῶν*. The last-named work is never cited by Aristotle, and contains no express references to any of his books. In fact its own broad and sketchy methods of exposition show it to be the work not of the founder, but of a later scholar of the Peripatetic school, probably however of one of its earliest generations. (2) Π. *μνήμης καὶ ἀναμνήσεως*, PT. 40, is quoted in the *De Motu An.* c. 11, *ad fin.* and by the Commentators. The book of Mnemonics noticed

p. 72, n. 2 *fin. supra*, has nothing to do with it. (3) Π. ὕπνου καὶ ἐγρηγόρσεως cited *De Longit. V.*, *Part. An.*, *Gen. An.*, *Motu An.*, and announced as in contemplation (*Ind. Ar.* 103, a, 16 sq) by *De An.* iii. 9, 432, b, 11, *De Sensu*, c. 1, 436, a, 12 sq. It is frequently connected with (2) (but clearly for external reasons only) as if they were one treatise, Π. μνήμης καὶ ὕπνου (GELL. vi. 6, ALEX. *Top.* 279, Schol 296, b, 1, copied SUID. μνήμη, Alex. *De Sensu*, 125, b, MICHAEL, *in Arist De Mem.* 127, a, *Ptol.* 4). It is, however, clear from Arist. *Divin. in Somn.* c. 2, *fin.*, that it was in fact bracketed with (4) Π. Ἐνυπνίων and (5) Π. τῆς καθ' Ὕπνον μαντικῆς. (4) is also in the *De Somno*, 2, 456, a, 27, announced as in preparation. (6) Π. μακροβιότητος καὶ βραχυβιότητος, cited, not by name, *Part. An* iii. 10, 673, a, 30, and by name ATHEN. viii. 353, a, PT. 46, and perhaps also AN. *App.* 141. (7) Π. ζωῆς καὶ θανάτου: to which (8) Π. ἀναπνοῆς, is in Aristotle's view so closely related that they form one whole (*De Vita et M.* c. 1, *init.* 467, b, 11, *De Respir.* c. 21, 486, b, 21). There was a third tract, Π. νεότητος καὶ γήρως, spoken of by Aristotle (467, b, 6, 10), to which our editors ascribe the first two chapters of the Π. ζωῆς καὶ θανάτου, but clearly without reason, for it seems more probable either that Aristotle never wrote the tract or that it was lost at a very early date (cf. BRANDIS, 1191, BONITZ, *Ind. Ar.* 103, a, 26 sq, HEITZ, p. 58).—Inasmuch as the *De Vita et Morte*, c. 3, 468, b, 31 (cf. *De Respir.* c. 7, 473, a, 27) mentions the Essay on the Parts of Animals as already existing (cf. ROSE, *Ar. Libr. Ord.*, who wrongly refers to *Hist. An.* iii. 3, 513, a, 21), and as the Essay on Life and Death is spoken of in the *De Longit. V.* c. 6, 467, b, 6 as the conclusion of the inquiries concerning animals, Brandis (1192 sq.) suggests that only the first half of the so-called 'Parva Naturalia' (Nos. 1-5) was composed immediately after the *De Anima*; and that the rest of these (which in Ptolemy's catalogue stand at No. 46 sq. divided from the books on Sense, Sleep, and Memory by the books on Zoology) were not written until after the works on the Parts, the Movement, and the Generation of Animals, though projected earlier. And it is true that in the *De Generat. Anim.* iv. 10, 777, b, 8, we hear that inquiries into the reason of the varying duration of life are projected, and these are not further dealt with in that work. But on the other hand the *Part. An.* iii. 6, 669, a, 4 refers to *De Respir.* c. 10, 16, and the same iv. 13, 696, b, 1, and 697, a, 22, to *De Respir.* c. 10, 13; and *Gen. An.* v. 2, 781, a, 20, as already observed, to *De Vita et Morte*, 3, 469, a, 10, sq. (cf. *Ind. Ar.* 103, a, 23, 34, sq., where the other references are more problematical). If Brandis is right, these references must have been added, as does sometimes happen, to works previously completed. As to the genuineness of the writings already named, it is guaranteed not only by internal evidence, but by the references referred to.—Another projected tract, Π. νόσου καὶ ὑγιείας (*De Sensu* c. 1, 436, a, 17, *Long. Vit.* c. 1, 464, b, 32, *Respir.* c. 21, 480, b, 22, *Part. An.* ii. 7,

gations *On the Parts of Animals*,[1] with the connected essays on the Generation[2] and the Movement of

653, a, 8), was probably never written (though Heitz, p. 58 and *Fr. Ar.* 169, thinks otherwise). It is unknown to ALEXANDER, *De Sensu*, 94, and therefore it is likely that the *De Sanitate et Morbo* known by the Arabic writers (Hadschi Khalfa *apud* WENRICH, 160) was a forgery. Two books Π. ὄψεως (AN. *App.* 173) and one Π. φωνῆς (*ibid.* 164) could hardly be genuine (cf. p. 86, n. 1).—A book Π. τροφῆς seems to be referred to as existing in the *De Somno*, c. 3, 456, b, 5 (the reference in *Meteor.* iv. 3, 381, b, 13 being too uncertain), and it is spoken of as a project in *De An.* ii. 4 *fin.*, *Gen. An.* v. 4, 784, b, 2, *Part. An.* ii. 3, 650, b, 10, and c. 7, 653, b, 14, and c. 14, 674 a, 20, and iv. 4, 678, a, 19. The reference in *De Motu An.* 10, 703, a, 10 (cf. MICHAEL EPHES. *ad loc.* p. 156, a) is not to a Π. τροφῆς, but to the Π. πνεύματος: for the words τίς μὲν οὖν ἡ σωτηρία τοῦ συμφύτου πνεύματος εἴρηται ἐν ἄλλοις clearly relate to the words τίς ἡ τοῦ ἐμφύτου πνεύματος διαμονή; (Π. πνευ. *init.*). (So BONITZ, *Ind. Ar.* 100, a, 52; but ROSE, *Ar. Libr. Ord.* 167 makes them refer to the Π. ζῴ. κινήσ. itself, and HEITZ, *Fr. Ar.* 168 to the Π. τροφῆς.) The work is named in PT. No. 20, where it is wrongly given three books. It dealt with food and other matters in an aphoristic style; and that it is later than Aristotle is clear from the fact that it recognised the distinction of veins and arteries, which was unknown to him (cf. *Ind. Ar.* 109, b, 22, sq.). In any case it is Peripatetic; cf. further *ap.* ROSE, *Ar. Libr. Ord.* 167, sq., and Brandis, p. 1203, who both with Bonitz reject the book.

[1] Π. ζῴων μορίων four books—(in AN. *App.* 157, three books): cited in the *De Gen. An.*, *Ingr. An.*, *Motu An.* (cf. *Ind. Ar.* 103, a, 55 sq), and the *De Vita et M.* and *De Respir.* (*de q. v.* p. 91, *supra*)—but the *De Somno*, 3, 457, b, 28 might be referred to *De Sensu*, 2, 438, b, 28, though *De Somno*, c. 2, 455, b, 34 may be better paralleled by *Part. An.* iii. 3, 665, a, 10 sq., than by *De Sensu*, 2, 438, b, 25 sq. It is spoken of as projected in *Meteor.* i. 1, 339, a, 7, and *Hist. An.* ii. 17, 507, a, 25. The first book is a kind of introduction to the zoological works, including the treatises on the Soul, and the activities and conditions of life, and it cannot well have been originally meant for this place (cf. SPENGEL, 'On the order of Aristotle's books on Natural Philosophy,' *Abh. d. Münch. Akad.* iv. 159, and the others there cited).

[2] Π. ζῴων γενέσεως, five books (in AN. *App.* 158, three books, PT. No. 44, five books, *ibid.* No. 77, the same work in two books; the errors are of no significance). It is often referred to by Aristotle, but only in the future (cf. *Ind. Ar.* 103, b, 8 sq.). DIOG. omits it; but its genuineness is beyond doubt. Book v., however, seems not to belong to it, but to be an appendix to the works on the Parts and Generation of Animals, just as the

Animals,[1] complete his zoological system. Later in date, but earlier in their place in his teaching, were the lost books *On Plants*.[2] Other treatises touching this

'Parva Naturalia' are to the *De Anima*. For summaries of the contents of the *Part. An.* and the *Generat. Anim.* see MEYER, *Arist. Thierk.* 128 sq., and LEWES, *Ar.* c. 16 sq. The tract *De Coitu* (Hadschi Khalfa, *ap.* Wenrich, p. 159) was spurious: for it cannot be referred, as Wenrich refers it, to the title Π. μίξεως in *De Sensu*, c. 3 (cf. p. 83, n. 1, *supra*). As to the book Π. τοῦ μὴ γεννᾷν, *v.* p. 88, *supra*.

[1] Π. ζῴων πορείας, cited by that name in *Part. An.* iv. 11, 690, b, 15 and 692, a, 17, as the Π. πορείας καὶ κινήσεως τῶν ζῴων in *Part. An.* iv. 13, 696, a, 12, and as Π. τῶν ζῴων κινήσεως in the *De Cœlo*, ii. 2, 284, b, 13, cf. *Ingr. An.* c. 4, 5, c. 2, 704, b, 18; yet it itself cites (c. 5, 706, b, 2) the *Part. An.* iv. 9, 684, a, 14, 34, as an earlier work. According to its concluding words in c. 19 (which, as already suggested at p. 89, n. 2, may be spurious) it is later than the Π. ζῴων μορίων, to which also its introductory words seem to refer back; and yet it is frequently cited in that work, and at its close (*Part. An.* 697, b, 29) there is no hint of an essay on Movement as still to come. Probably it was, in fact, composed while the larger work was in progress.—The tract Π. ζῴων κινήσεως can hardly be authentic; among other reasons, because it cites the Π. πνεύματος (cf. p. 89, n. 3 *fin.*). Rose (*Ar. Libr. Ord.* 163 sq.) and Brandis (ii. b, 1, p. 1271, 482) declare it spurious: Barthélemy St. Hilaire (*Psych. d'Arist.* 237) accepts it as genuine. Of the Indices, AN. *App.* No. 156, and PT. No. 41, have the Π. ζῴων κινήσεως, and PT. No. 45, Π. ζῴων πορείας.

[2] Π. φυτῶν β' (D. 108, AN. 96, PT. 48). Promised by Aristotle in *Meteor.* i. 1, 339, a, 7, *De Sensu* c. 4, 442, b, 25, *Long. Vitæ*, 6, 467, b, 4, *De Vita* 2, 468, a, 31, *Part. An.* ii. 10, 656, a, 3, *Gen. An.* i. 1, 716, a, 1, v. 3, 783, b, 20, and cited in *H. An.* v. 1, 539, a, 20, *Gen. An.* i. 23, 731, a, 29 (in the last, it is wrong to change the perfect tense into the future in the words of citation). Though both these references must have been inserted after the books were complete, it is possible that Aristotle may have inserted them. ALEX. p. 183, on *De Sensu*, *l.c.*, remarks that a book on Plants by Theophrastus was extant, but none by Aristotle. So MICHAEL EPHES. on *De Vita et M.* 175 b, SIMPLICIUS PHILOP. &c. (*apud* ROSE, *Ar. Ps.* 261, HEITZ, *Fr. Ar.* 163) say the contrary, but we need not suppose they spoke from personal knowledge of the Π. φυτῶν. Quintil. (xii. 11, 22) proves nothing for, and Cic. (*Fin.* v. 4, 10) nothing against, their genuineness. What ATHEN. (xiv. 652 a, 653 d, &c.) cites from them (*Ar. Fr.* 250–4) may as probably be taken from a false as from a genuine book. The two Aristotelian references mentioned make it, however, overwhelmingly probable that Aristotle did write two books on Plants, which were

still extant in the time of Hermippus, though they were afterwards displaced by the more elaborate work of Theophrastus (so HEITZ, *Ar. Fr.* 250, and *Verl. Schrift.* 61, though ROSE, *Ar. Ps.* 261, thinks the books by Theophrastus were ascribed to Aristotle). According to ANTIGONUS (*Mirabil.* c. 169, cf. 129, *ap. Ar. Fr.* 253, *Fr. Hz.* 223) Callimachus as well as Theophrastus seems to have borrowed from these two books. So did the compiler of the Φυτικὰ, as to which POLLUX, x. 170 (*ap. Ar. Fr.* 252, *Fr. Hz.* 224) could not say whether they belonged to Theophrastus or to Aristotle, but which no doubt, like the ζωϊκὰ mentioned at p. 88, *supra*, were compiled by a later disciple for lexicographical purposes. In like manner, Athenæus and other similar collectors also used these books (cf. ROSE and HEITZ, *ibid.*); and they sometimes distinguish between the phrases used by Aristotle and by Theophrastus (*Ar. Fr.* 254, *Fr. Hz.* 225). — The two extant books Π. φυτῶν are emphatically un-Aristotelian. In the older Latin text they have passed already through the hands of two or three translators. Meyer (Pref. to NICOL. DAM. *De Plantis*, ii. ed. 1841) ascribes them in their original form to Nicolaus of Damascus, though possibly they are only an extract from his book, worked over by a later hand. Jessen's suggestion (*Rhein. Mus.* 1859, vol. xiv. 88) that Aristotle's genuine work is contained in the work of Theophrastus is in no way supported by the fact that the latter closely agrees with what Aristotle elsewhere says, or promises to discuss in his Π. φυτῶν: for we know how constantly the earlier Peripatetics adopted the teaching and the very words of Aristotle. On the other hand, the only passage cited verbally from Aristotle's books (ATHEN. xiv. 652 a, *ap. Ar. Fr.* 250) is not in those of Theophrastus, so far as we have them; and the latter contain no direct reference to any of the Aristotelian writings—a circumstance which would be incredible in a work so extensive which touched at so many points the earlier Aristotelian treatises. The very passage (*Caus. Pl.* vi. 4, 1) in which Jessen finds one main proof of his theory points to several later modifications of an Aristotelian doctrine which had arisen in the School after his death. Theophrastus, in contrast with Aristotle's view, speaks of male and female plants (cf. *Caus. Pl.* i. 22, 1, *Hist.* iii. 9, 2, &c.). But a decisive argument is to be found in the fact that not only does the text of Theophrastus speak of Alexander and his Indian expedition in a way (*Hist.* iv. 4, 1, 5, 9, *Caus.* viii. 4, 5) which would be hardly possible in Aristotle's lifetime, but it also refers to what happened in the time of King Antigonus (*Hist.* iv. 8, 4) and the Archons Archippus, B.C. 321 or 318 (*Hist.* iv. 14, 11) and Nicodorus, B.C. 314 (*Caus.* i. 19, 5). It would likewise be clear on a full comparison that the diction and manner of statement in the Theophrastic books makes it impossible to attribute them to Aristotle.

field of work, such as the Anthropology,[1] the Physiognomics,[2] the works on Medicine,[3] Agriculture,[4] and Hunt-

[1] Π. Ἀνθρώπου φύσεως, only named in AN. *App.* 183. There are a few items which seem to have belonged to this tract, *apud* ROSE, *Ar. Ps.* 379, *Ar. Fr.* 257–264, p. 1525, *Fr. Hz.* 189 sq.

[2] Φυσιογνωμονικὰ (Bekker, 805), [-κὸν α' in D. 109, but -κα β' in AN. 97]. An extended recension of this work is indicated by the numerous references to physiognomic theories not to be found in our text, which occur in a treatise on Physiognomy written probably by Apuleius (*apud* ROSE, *Anecd. Gr.* 61 sq.; cf. *Fr. Hz.* 191, and ROSE, *Ar. Ps.* 696 sq.).

[3] D. mentions two books of Ἰατρικά: the ANON. two books Π. ἰατρικῆς: *ibid.* APP. 167, seven books Π. ἰατρικῆς: PT. 70 five books of Προβλήματα ἰατρικὰ (from which it appears that the ἰατρικὰ in the list of Diog. were also problems, book i. of our extant Problems being made up of such medical questions and answers): *Vita Marc.* p. 2 R, Προβλήματα ἰατρικὰ: PT. 71 Π. διαίτης: *ibid.* 74 b, *De Pulsu*: *ibid.* 92, one book ἰατρικὸς: Hadschi Khalfa *ap.* WENRICH, p. 159, *De Sanguinis Profusione*: COEL. AUREL. *Celer. Pass.* ii. 13, one book *De Adjutoriis* (perhaps a mistake in the name). Galen in HIPPOCR. *De Nat. Hom.* i. 1, vol. xv. 25 K, knows of an Ἰατρικὴ συναγωγὴ in several books, bearing Aristotle's name, which was nevertheless recognised as being the work of his pupil, Meno; and this is possibly identical with the Συναγωγὴ in two books named by Diog. 89 (as WENRICH, p. 158, suggests). For the little that remains of it, see ROSE, *Ar. Ps.* 384 sq., *Ar. Fr.* 335–341, p. 1534; *Fr. Hz.* 216, but on *Fr.* 362 cf. p. 88, *supra.* The genuineness of these writings, or at least of some of them, cannot be maintained. That Aristotle held that medical subjects should be treated in a technical way, and not from the point of view of natural science, is evident from his own declaration which he makes, p. 9, 1 *fin.* (cf. *De Sensu*, i. 1, 436, a, 17; *Longit. V.* 464, b, 32; *De Respir.* c. 21, *fin.*; *Part. An.* ii. 7, 653, a, 8), and such an indefinite statement as that of Ælian (*V. H.* ix. 22) cannot prove the contrary. As to the composition Π. νόσου καὶ ὑγιείας see p. 91 *fin.*—Galen (as Heitz *ibid.* justly remarks) can have known no composition of Aristotle on medical science, since he never mentions any such, although he quotes the philosopher more than six hundred times.

[4] AN. 189 mentions the Γεωργικὰ amongst the Pseudepigrapha. PT. 72, on the other hand, gives 15 (or 10) books *De Agricultura* as genuine, and the statement in GEOPON. iii. 3, 4 (*Ar. Fr.* 255 sq. p. 1525) on the manuring of almond-trees seems to have been taken from this, and not from the treatise on plants. Rose (*Ar. Ps.* 268 sq.; *Hz. Fr.* 165 sq.) mentions other things which may perhaps have come from this source. That Aristotle did not write about agriculture or similar subjects is clear from *Polit.* i. 11, 1258, a, 33, 39.

ing,[1] are, without exception, spurious. The *Problems*[2] are no doubt based on Aristotelian materials;[3] but our extant collection under that name can only be described as a set of gradually gathered and unequally developed productions of the Peripatetic school, which must have existed in many other forms parallel to our own.[4]

[1] In the Index of Ptolemy, No. 23, Hadschi Khalfa gives (Π. τῶν φωλευόντων): *De Animalium Captura, nec non de Locis, quibus deversantur atque delitescunt*, i.

[2] With regard to this treatise see the exhaustive article by Prantl 'Ueb. d. Probl. d. Arist.' among the *Abh. d. Münch. Akad.* vi. 341–377; ROSE, *Arist. Libr. Ord.* 199 sqq.; *Ar. Ps.* 215 sqq.; HEITZ, *Verl. Schr.* 103 sqq., *Fr. Ar.* 194 sqq.

[3] Aristotle refers in seven places to the Προβλήματα or Προβληματικὰ (PRANTL, *ibid.* 364 sq.; *Ind. Ar.* 103, b, 17 sqq.), but only one of these quotations suits to a certain extent the extant 'Problems;' and the same is true (PR. *ibid.* 367 sqq.) of the majority of the later references.

[4] PRANTL, *ibid.* has abundantly proved this, and he has also shown (*Münch. Gel. Anz.* 1858, No. 25) that among the 262 further problems which are given by Bussemaker in vol. iv. of the Didot edition of Aristotle, and some of which were at one time erroneously ascribed to Alexander of Aphrodisias (cf. USENER, *Alex. Aphr. Probl.*, Lib. iii., iv., Berl. 1859, p. ix. sqq.), there is probably nothing written by Aristotle. The same is true of those which Rose (*Ar. Ps.* 666 sqq.) takes from a Latin MS. of the 10th century. The character ascribed in the text to the collection of 'Problems' may also explain the many varying statements as to its title and the number of books it included. In the MSS. they are sometimes called Προβλήματα, sometimes Φυσικὰ προβλήματα, and sometimes with the addition κατ' εἶδος συναγωγῆς ('arranged in accordance with the matter'). Gellius generally says, *Problemata* (xix. 4), *Prob. physica* (xx. 4, quoting *Probl.* xxx. 10): Προβλήματα ἐγκύκλια; Apul. (*De Magia*, c. 51) has *Problemata*; Athenæus and Apollonius (*vid.* Indices and Prantl, 390 sq.) always Προβλήματα φυσικά; Macrob. (*Sat.* vii. 12) *Physicæ quæstiones*. To collections of problems are also referable the titles: Φυσικῶν λη' κατὰ στοιχεῖον (D. 120, AN. 110; as to the words κ. στοιχ., the explanation of which in Rose, *Ar. Ps.* 215, is not clear, they are to be understood of the arrangement of the different books in the alphabetical order of their headings); Προβλήματα (68 or 28 B, PT. 65); Ἐπιτεθεαμένων προβλημάτων β' (D. 121, AN. 112); Ἐγκυκλίων β' (D. 122, AN. 113, Προβλήματα ἐγκύκλ. 4 bks., PT. 67); *Physica Problemata, Adspectiva Probl.* (AMMON. LATIN. p. 58); Ἄτακτα ιβ' (D. 127, [ἀ]διατάκτων ιβ' AN. 119). *Præ-*

Turning to Ethics and Politics, we have on the former subject three comprehensive works,[1] of which,

*missa Quæstionibus* (PT. 66, says the Greek title is '*brbimatu bruagrawa*,' *i.e.* Προβλημάτων προγραφὴ, or Προαναγραφή); Συμμίκτων ζητημάτων οβ' (AN. 66 with the additional clause: ὥς φησιν Εὔκαιρος ὁ ἀκουστὴς αὐτοῦ); David (*Schol. in Ar.* 24, b, 8) also speaks of 70 books Π. συμμίκτων ζητημάτων, and the *Vita Marc.* p. 2, R of Φυσικὰ προβλήματα in 70 books; Ἐξηγημένα (or Ἐξητασμένα) κατὰ γένος ιδ' (D. 128, AN. 121). With regard to the Προβλήματα μηχανικὰ, ὀπτικὰ, ἰατρικὰ, cf. p. 86, n. 1, and 95, n. 3. The spurious composition Π. προβλημάτων, to which besides D. 51 (and also AN. 48, although the περὶ is here wanting) Alex. *Top.* 34, *Schol. in Ar.* 258, a, 16, also refers, seems to have contained a theory as to setting and answering problems. See ROSE, *Ar. Ps.* 126, *Fragm.* 109, p. 1496, *Fr. Hz.* 115. On the other hand, book xxx. of our Problems cannot well be meant (as Heitz, 122, believes) by the ἐγκύκλια, *Eth. N.* 1, 3, 1096, a, 3. Aristotle seems rather to indicate what he calls in other places ἐξωτερικοὶ λόγοι, and *De Cœlo*, i. 9, 279, a, 30 Τὰ ἐγκύκλια φιλοσοφήματα. Cf. BERNAYS, *Dial. of Arist.* 85, 93 sqq. 171; BONITZ, *Ind. Ar.* 105, a, 27 sqq. More on this *infra*.

[1] Ἠθικὰ Νικομάχεια 10 B., Ἠθικὰ Εὐδήμια 7 B., Ἠθικὰ μεγάλα 2 B. Of our catalogues D. 38 only names Ἠθικῶν ε' *al.* δ'; (although DIOG. elsewhere (*Vita*, 21) cites the seventh book of the Ethics in connection with *Eth. Eud.* vii. 12, 1245, b, 20); AN. 39 has Ἠθικῶν κ (*e.g.* the *Eth. Nic.*, the last book of which is κ), and then again in the Appendix 174: Π. ἠθῶν (-ικῶν) Νικομαχείων ὑποθήκας (which seems to be an extract from the same work); PT. 30 sq. the Great Ethics in two books, the Eudemian Ethics in eight. Aristotle himself quotes (*Metaph.* i. 1, 981, b, 25, and in six passages of the *Politics*) the ἠθικὰ, meaning doubtless the Nicomachean Ethics (cf. BENDIXEN in *Philologus* x. 203, 290 sq.; *Ind. Ar.* 103, b. 46 sqq., and 101, b, 19 sqq.). Cic. (*Fin.* v. 5, 12) believes that the *Libri de Moribus* of Nicomachus are ascribed to Aristotle, inasmuch as the son would write very much like his father. Diogenes also (viii. 88) quotes *Eth. N.* x. 2 with the words: φησὶ δὲ Νικόμαχος ὁ Ἀριστοτέλους. On the other hand Atticus (*apud* EUS. *Pr. Ev.* xv. 4, 6) gives all three Ethics with their present names as Aristotelian; likewise Simpl. *in Cat.* 1, ζ, 43, ε and Schol. Porphyr. *Schol. in Ar.* 9, b, 22, who says the Eudemian Ethics were addressed to Eudemus, the Μεγάλα Νικομάχια (*M. Mor.*) to Nicomachus the father, and the Μικρὰ Νικομάχια (*Eth. N.*) to Nicomachus, the son of Aristotle. The same story is told by DAVID, *Schol. in Ar.* 25, a, 40. EUSTRAT. (*in Eth. N.* 141, a; cf. Arist. *Eth. Eud.* vii. 4 *init.* c. 10, 1242, b, 2) speaks of the Eudemian Ethics as the work of Eudemus, that is to say, he repeats this statement after one of the earlier writers whom he used (cf. p. 72, b), and who was, it would seem, not altogether unlearned: on the other hand, on his own supposition, or

however, only one—the *Nicomachean Ethics*—is of directly Aristotelian authorship.[1] A mass of smaller

following an equally worthless authority (1, b, m), he represents *Eth. N.* as dedicated to a certain Nicomachus, and *Eth. Eud.* to a certain Eudemus. A Scholion also which is attributed to ASPASIUS (*vid.* Spengel 'On the Ethical Writings under the name of Aristotle,' in the *Abh. d. Münch. Akad.* iii. 439–551, p. 520, cf. 'Schol. in Ar. Eth.' *Class. Journal*, vol. xxix. 117) must suppose Eudemus to be the author of the Eudemian Ethics, since on this supposition alone can he attribute the treatise on Pleasure to him, *Eth. N.* vii. 12 sqq. The Commentaries known to us (by Aspasius, Alexander, Porphyry, Eustratius) are concerned only with the Nicomachean Ethics. For further materials, cf. SPENGEL, *ibid.* 445 sqq.

[1] Schleiermacher ('On the Ethical Works of Aristotle,' for 1817, *W. W. Z. Philos.* iii. 306 sqq.) gave it as his opinion that, of the three ethical works, the so-called Great Ethics is the oldest, and the Nicomachean Ethics the latest, but the treatise of Spengel already cited makes the opposite view clear, viz. that the genuine work of Aristotle is the Nicomachean Ethics, that the Eudemian Ethics is a supplementary work by Eudemus, and that the Great Ethics is an extract taken directly from the Eudemian. But the position of the three books which are common to the Nicomachean and Eudemian Ethics (*Nic.* v.–vii., *Eud.* iv.–vi.) is still a moot point. Spengel (480 sqq.) believes that they belong originally to the Nicomachean Eth., but that, after the corresponding sections of the Eudemian Eth. were lost at an early period, they were employed to fill up the blanks in the Eudemian Eth.; he is inclined to look upon the treatise on pleasure, *Nic.* vii. 12 sqq., which Aspasius also attributes to Eudemus (see preceding note, *fin.*), as a fragment of the Eudemian Ethics (p. 518 sqq.), but without wishing to exclude the possibility of its being a sketch intended by Aristotle for the Nicomachean Eth., and later on replaced by x. 1 sqq. In his *Arist. Stud.* i. 20 (against which Walter argues in *Die Lehre v. d. prakt. Vernunft*, 88 sqq.) *Nic.* vi. 13 is also attributed to Eudemus. On the other hand Fischer (*De Ethicis Eudem. et Nicom.* Bonn, 1847), and with him also Fritzsche (*Arist. Eth. Eud.* 1851, Prolegg. xxxiv.) refer only *Nic.* v. 1–14 to the Nicomachean, and *Nic.* v. 15, vi., vii., to the Eudemian Ethics. Grant (*Ethics of Aristot.* i. 49 sqq.) refers the whole of these three books to the Eudemian; whilst Bendixen (*Philologus*, x. 199 sqq., 263 sqq.) on the contrary, for reasons worthy of note, defends the Aristotelian origin of the whole, including vii. 12–15. Brandis (*Gr.-röm. Phil.* ii. b, 1555 sq.), Prantl (*D. dianoët. Tugenden d. Ar.* Münch. 1852, p. 5 sqq.), and in the main also Ueberweg (*Gesch. d. Phil.* i. 177 sq. 5th ed.), and Rassow (*Forsch. üb. d. nikom. Ethik*, 26 sqq. cf. 15 sqq.) agree with the conclusions of Spengel; the last-named with this modification, which has much to support it, that *Nic.* v.–vii., though essentially Aristotelian,

tracts is also named,[1] but probably few of them were genuine. Of the sociological writings only one—the

has been submitted to the afterwork of another pen, and has perhaps, in consequence of a mutilation, been supplied from the Eudemian Ethics.

[1] Such are (besides the Dialogues mentioned on p. 56, n. 1, 59 sq., Π. δικαιοσύνης, Ἐρωτικὸς, Π. πλούτου, Π. εὐγενείας and Π. ἡδονῆς), the following: the small composition, still extant, Π. ἀρετῶν καὶ κακιῶν (*Arist. Opp.* 1249–1251), which is the work of a half-Academic, half-Peripatetic Eclectic, hardly earlier than the first century before Christ; Προτάσεις π. ἀρετῆς (D. 34, AN. 342); Π. ἀρετῆς (AN. *App.* 163); Π. δικαίων β′ (D. 76, AN. 64—PT. 11, 4 B.); Π. τοῦ βελτίονος α′ (D. 53, AN. 50); Π. ἑκουσίου (-ίων) α′ (D. 68, AN. 58); Π. τοῦ αἱρετοῦ καὶ τοῦ συμβεβηκότος α′ (D. 58; Π. αἱρετοῦ καὶ συμβαίνοντος, AN. 56). It is not probable that Aristotle composed a treatise Π. ἐπιθυμίας: In the beginning of the *De Sensu*, he proposes future researches into the faculty of desire, but we do not hear that they were carried out; what we find in Seneca (*De Ira*, i. 3. 9, 2, 17, 1, iii. 3, 1) may more probably have been contained in the writing Π. παθῶν (or -ους) ὀργῆς (D. 37, AN. 30), the supposed remnants of which Rose (*Ar. Ps.* 109 sqq., *Ar. Fr.* 94–97, No. 1492) and Heitz (*Fr.* 151 sq.) have put together. Whether it was a dialogue (Rose) or a treatise (Heitz) cannot with certainty be determined; the latter seems the more probable opinion. Its genuineness is, to say the least, undemonstrable, and the title does not sound Aristotelian. D. 61, AN. 60 have also Πάθη α′. Further (besides the Ἐρωτικὸς mentioned on p. 59), Ἐρωτικὰ (AN. *App.* 181; PT. 13, 3 B.) and 4 B. of Θέσεις ἐρωτικαὶ (D. 71, AN. 66; PT. 56, 1 B.) are mentioned, both of them doubtless equally spurious. AN. 162 reckons Π. σωφροσύνης among the Pseudepigrapha. Π. φιλίας α′ (D. 24, AN. 24, PT. 25) is supposed not to be a copy from *Eth. N.* viii. ix., but a special treatise, which can hardly be genuine. Still less can Aristotle have been the author of Θέσεις φιλικαὶ β′ (D. 72, AN. 67). Of the two writings Π. συμβιώσεως ἀνδρὸς καὶ γυναικὸς (AN. *App.* 165) and Νόμους (-οι) ἀνδρὸς καὶ γαμετῆς (*ibid.* 166), the former is mentioned by other writers several times (*e.g.* by Clemens, Olympiodor., and David in the passages given by ROSE, *Ar. Ps.* 180 sq., *Ar. Fr.* 178 sq., p. 1507). Rose (*De Ar. Libr. Ord.* 60 sqq.) has pointed out two Latin translations of these Νόμοι (or the writing Π. συμβιώσ., if both are not merely different titles of the same book) which profess to be the second book of the *Economics*: see *Ar. Pseud.* 644 sqq.; *Fr. Hz.* 153 sqq. PLUTARCH, ATHENÆUS, and others quote from a writing Π. μέθης, perhaps a dialogue; cf. ROSE, *Ar. Ps.* 116 sqq., *Ar. Fr.* 98–106, p. 1493 sq.; *Fr. Hz.* 64 sq. It was certainly not genuine; it may have been identical with the writing of the same name by Theophrastus (HEITZ, *ibid.*), only in that case Athenæus, who,

eight books of the *Politics*[1]—is preserved; but though it contains some of his most mature and admirable work it is unhappily left, like the *Metaphysics*, unfinished.[2] The *Œconomics* cannot be considered genuine.[3] Of all the rest we have lost everything

in addition to these two, quotes a third by Chamæleon, must have been indebted for his quotations to various writers, to whom it was known by different names—a not very probable supposition. What is quoted from it is concerned, partly with historical, partly with physiological discussions; whether drunkenness was regarded also from a moral point of view we do not know. Nor do we know any more as to the contents of the Νόμοι συσσιτικοὶ (in the MSS., of D. 139, Νόμος συστατικὸς, of AN. 130 Νόμων συστατικῶν α', for the circumstance of the Platonic republic being mentioned in it (PROCL. *in Remp.* 350, *Ar. Fr.* 177, p. 1507) gives us no indication; hence we cannot determine whether Rose (*Ar. Ps.* 179) is right in supposing that there was a discussion in it on the arrangement of, and good behaviour at symposia, or Heitz (*Ar. Fr.* 307), in believing that it contained a collection of the customs relating to them. Π. συσσιτίων ἢ συμποσίων (AN. *App.* 161) is identical with it; not so, however, the three books Συσσιτικῶν προβλημάτων (AN. 136), the title of which makes us think not so much of questions with regard to meals, as of questions such as are proposed at a meal, like Plutarch's Συμποσιακὰ προβλήματα. For the Παραγγέλματα cf. p. 72, n. 2 *fin.*

[1] Aristotle puts this work in the closest connection with the Ethics, by treating the latter as auxiliary to politics (*Eth. N.* i. 1, 1094 a, 26 sqq., 1095, a, 2, c. 2 *init.* c. 13, 1102, a, 5, vii. 12 *init.*; *Rhet.* i. 2, 1356, a, 26). He expects from politics the realisation of the principles laid down by Ethics (*ibid.* x. 10). But he does not mean both to be merely two parts of one composition (cf. *Polit.* vii. 1, 1323, b, 39, c. 13, 1332, a, 7, 21, ii. 1, 1261, a, 30, iii. 9, 1280, a, 18. c. 12, 1282, b, 19). Even apart from the citation *Rhet.* i. 8 *fin.*, and the mention of it in the catalogue (D. 75, AN. 70), its genuineness cannot be doubted, however seldom it is named by ancient writers (see the remarks of SPENGEL, 'Ueb. d. Politik d. Arist.,' *Abh. d. Münchn. Akad.* v. 44 *infra*).

[2] For further information, see the section on the political philosophy of Aristotle, ch. xiii., *infra.*

[3] Of the second book (as to the beginning of which see ROSE, *Arist. Libr. Ord.* 59 sq.) this has long been admitted, but Göttling (*Arist. Œcon.* p. vii. xvii.) considers the first to be a section of a genuine Aristotelian writing; it seems more probable that it is the work of a later writer based on *Polit.* i. (See end of ch. xxi., *infra.*) D. 23, AN. 17 name Οἰκονομικὸς (or -ον) α'. Cf. p. 99 *supra* on another pretended second book.

except a few fragments.[1] Among them the loss of

[1] The political writings named, besides those quoted, are the following: (1) Πολιτεῖαι, a collection of facts with regard to 158 states (D. 145, AN. 135, the text of which BERNAYS, *Rh. Mus.* vii. 289, with the approval of ROSE, *Ar. Ps.* 394, has evidently improved), which, according to the fragments and the statements of CIC. *Fin.* v. 4, 11, and PLUT. *N. P. Su. V.* 10, 4 (who names the work κτίσεις καὶ πολιτεῖαι) not only treated of the constitution, but also of the usages, customs, situation of the towns, the history of their foundation, their local traditions, &c. PT. 81 gives the number of cities as 171 (or 191, according to the view of HERBELOT, *Bibl. Or.* 971, a): AMMON. *V. Ar.* 48 gives 255: *Ammon. Lat.* p. 56, Ps.-Porphyr. *Schol. in Ar.* 9, b, 26, and David, *ibid.* 24, a, 34, say 250, and Philop. *ibid.* 35, b, 19, about 250, but the increase does not seem to be founded on any later extension of the collection, but merely on clerical mistakes (cf. ROSE, *Ar. Ps.* 394). Simpl. (*Categ.* 2, γ. *Schol.* 27, a, 43) seems by the words ἐν ταῖς γνησίαις αὐτοῦ πολιτείαις to point to the existence of spurious Polities; ρνη' (158) instead of γνησίαις may be the true reading (HEITZ, *Ar. Fr.* 219), though IDELER, *Ar. Meteor.* i., xii. 40 can hardly be right in substituting ἐπιστολαῖς for πολιτείαις). The numerous fragments of the large collection are found in MÜLLER, *Fragm. Hist.* ii. 102 sqq. (cf. BOURNOT, in *Philolog.* iv. 266 sqq.); ROSE, *Ar. Ps.* 402 sqq.; *Ar. Fr.* 343–560, p. 1535 sqq.; *Fr. Hz.* 218 sqq. The genuineness of the work, which Rose (*Ar. Libr. Ord.* 56 sq., *Ar. Ps.* 395 sq.) disputes, has no weighty arguments against it (as HEITZ, p. 246 sqq. shows); and even if the external evidence, of which that of TIMÆUS (*apud* POLYB. xii. 5, 11) is the oldest producible, did not utterly exclude Rose's supposition that the work was published and circulated in his name soon after Aristotle's death, nevertheless the internal improbability of that theory would be much strengthened by it. The declarations of DAVID, *ibid.*, and the Schol. to Porphyry's *Isagoge* (*vid.* ROSE, *Ar. Ps.* 399, *Ar. Fr.* 1535) favour the supposition that the different states in the Polities are taken in alphabetical order; and this explains why the Athenians (according to *Fr.* 378, where, however, the reading is uncertain) are treated in the 1st book, and the Ithacans in the 42nd (*Fr.* 466). The circumstance that the numerous fragments all contain merely isolated notes, without reference to a uniform complete treatise, will not (as ROSE, *Ar. Ps.* 395 holds) serve as a proof of the spuriousness of the work; but, in conjunction with the fact that the Aristotelian writings nowhere refer to the work in question (for even *Eth. N.* x. 10, 1181, b, 17, refers to the Politics; cf. HEITZ, 231 sq.), it supports the view (HEITZ, 233 sq.) that the Polities was not a literary completed whole, but a collection by Aristotle, for his own use, of facts which he had gathered partly by personal observation and inquiries, and partly from

Aristotle's collection of forms of government in various cities, is simply irreparable.[1]

Our *Poetics*[2] is only a fragment; but not even so

writings. If this be so, copies would only be circulated after his death. A chapter out of the Πολιτεία Ἀθηναίων may have given rise to the title Π. τῶν Σόλωνος ἀξόνων (AN. *App.* 140: cf. MÜLLER, *ibid.*, 109, 12).—A similar collection was (2) the Νόμιμα βαρβαρικὰ, which are quoted under this title by APPOLLON. *Mirabil.* 11; VARRO, i. 1, vii. 70; AN. *App.* 186 (νομίμων βαρβ. συναγωγή); from this title also the designations Νόμοι α' β' γ' δ' (D. 140), νομίμων δ' (AN. 131), seem to have been wrongly transcribed. To them the νόμιμα Ῥωμαίων (AN. *App.* 185) and the νόμιμα Τυρρηνῶν (ATHEN. i. 23, d) probably belonged. Among the few fragments (*apud* MÜLLER, *ibid.* 178 sqq., ROSE, *Ar. Ps.* 537 sqq., *Ar. Fr.* 561–568, p. 1570, *Fr. Hz.* 297 sq.), Nos. 562, 563 and 564 can only be attributed to Aristotle under the supposition that he did not give their contents in his own name, but as traditions somewhere current. — (3) The Δικαιώματα τῶν πόλεων (AMMON. *Differ. Vocab.*, Νῆες) or Δικ. Ἑλληνίδων πόλεων (*V. Marc.* p. 2, R) seem to have dealt with quarrels between the Hellenic states and their settlement; they are also named more briefly Δικαιώματα (D. 129, AN. 120, HARPOCRAT. Δρυμός).—(4) The Θέσεις πολιτικαὶ β' (AN. 69; the same is the right reading in D. 74) were in any case spurious. The ANON. 5 applies the name Π. πολιτικῆς to the Gryllos, but that must be a mistake (see above, p. 59).— On the Πολιτικὸς cf. p. 57; on Π. βασιλείας and Ὑπὲρ ἀποίκων, p. 60, *sub fin.*; on Π. ῥήτορος ἢ πολιτικοῦ, p. 72, n. 2, towards the end; on Π. ἀρχῆς, p. 81, n. 1, *fin.*; on a bungling forgery of the Middle Ages, *Secretum secretorum* (or, *Aristotelis ad Alexandrum regem de moribus rege dignis*), cf. GEIER, *Arist. und Alex.* 234 sq; ROSE, *Arist. Libr. Ord.* 183 sq, *Ar. Ps.* 583 sq.

[1] Since this was written the Athenian Πολιτεία has been recovered.

[2] This writing, in our editions, is entitled: Π. ποιητικῆς. Aristot. himself mentions it in the *Politics* (viii. 7, 1341, b, 38), as a future work; in the *Rhetoric* (i. 11 *fin.*, iii. 1, 1404, a, 38, c. 2, 1404, b, 7, 28, 1405, a, 5, c. 18, 1419, b, 5, with which cf. p. 74, n. 1), as already existing, with these words: ἐν τοῖς περὶ ποιητικῆς, or (1404, b, 28) ἐν τ. π. ποιήσεως. The Indices name: Πραγματείας τέχνης ποιητικῆς β' (D. 83), τέχνης ποιητ. β' (AN. 75), *De arte poëtica secundum disciplinam Pythagoræ*, PT. FR. (this addition is caused by the combination of two different titles: cf. ROSE, *Ar. Ps.* 194). PS.-ALEX. *Soph. El.* Schol. in Ar. 299, b, 44, has ἐν τῷ π. ποιητ.; likewise HERM. *in Phædr.* 111, and AST, ἐν τῷ π. π.; SIMPL. *Cat. Schol.* 43, a, 13, 27: ἐν τῷ π. π.; DAVID, *ibid.* 25, b, 19, τὸ π. π.; on the other hand AMMON. *De interpr.* Schol. 99, a, 12, ἐν τοῖς π. ποι.; BOETH. *De interpr.* 290, *in libris quos de arte poëtica scripsit.* The more ancient authorities are acquainted with two

much as this remains of Aristotle's other contributions to the theory and history of Art or of his dissertations on the poets.[1] Nor is there much left of the other

books on Poetry (a third is mentioned only in the quotations given on p. 58, n. 1, with regard to the writing Π. ποιητῶν), the more modern only with one; except in so far as they copy more ancient writers, as we must suppose was the case with Ammonius and Boëthius. From this alone we might suppose that the writing in question originally had a greater extension than it now has, but this becomes certain from the references to such parts of it as are missing in our recension, as for instance the discussion on the Catharsis promised in *Polit.* viii. 7, 1341, b, 38, which would naturally have come in the section on Tragedy, and, as we learn from sure traces, actually did occur there (cf. BERNAYS, 'Grundz. d. Abh. d. Arist. üb. d. Wirkung d. Trag.' *Abh. d. hist.-phil. Ges. in Breslau*, 160 sqq., 197 sq.; SUSEMIHL, p. 12; VAHLEN, p. 81 sq. of his edition, and others); the examination of Comedy, promised *Poet.* c. 6 *init.*, and quoted *Rhet.* i. 11 *fin.*, of which Bernays (*Rh. Mus.* viii. 561 sqq.) has pointed out valuable remnants in Cramer's *Anecd. Paris.*, vol. i. app. (now in Susemihl, p. 208 sq., Vahlen, 76 sq.); and the discussion on Synonyms, which Simpl. mentions, *Categ.* Schol. 43, a, 13, 27. In other places also our text shows many greater or smaller gaps, as also interpolations (as c. 12 and many smaller ones), and inversions (the most considerable that of chap. 15, which ought to come after chap. 18), which sufficiently prove that we only possess Aristotle's work in a mutilated and hopelessly corrupt condition. We cannot here inquire how its present condition may be explained (SUSEMIHL, *ibid.*, p. 3 sq., gives an enumeration of the different, and in part widely diverging attempts at explanation). It may be true, as SUSEMIHL concludes, that the carelessness of the writing, the caprice of the copyists, and the freaks of accident account for most of the mischief; but we cannot make these factors responsible for the interpolations, except in so far as they may have rendered possible the introduction of some marginal notes into the text.

[1] Of the Dialogue Π. ποιητῶν γ′ we have already spoken on p. 58. Besides this AN. 115 gives Κύκλον π. ποιητῶν, likewise in three books. This title may have arisen, by duplication and corruption, from that of the Dialogue, or it may (according to HEITZ, 178) designate a work distinct from it: but the 'κύκλον' may also have sprung from the 'ἐγκύκλιον' (or -ίων) which is found in No. 113.—Allied to it, it would seem, are Π. τραγῳδιῶν α′ (D. 136, AN. 128) and Κωμικοὶ (EROTIAN, *Exp. Voc. Hippocr.* s. v. Ἡρακλ. νόσον). Müller (*Hist. Gr.* ii. 82), though not rightly, takes the Διδασκαλίαι (D. 137; AN. 129; ROSE, *Ar. Ps.* 550 sq., *Ar. Fr.* 575–587, p. 1572 sq.; HEITZ, 255, *Fr. Hz.* 302 sq.), —seemingly a chronological cata-

books named to us, which dealt with subjects outside the main lines of the Aristotelian system;[1] and among

logue based on the existing inscriptions of the tragedies performed in Athens—as a part of the book on tragedies.—Further, a series of writings relating to poets is named, which took the form of problems: Ἀπορημάτων ποιητικῶν α′ (AN. *App.* 145); Αἰτίαι ποιητικαί (*ibid.* 146, where αἰτίαι seems to indicate the form of treatment which is proper to the ἀπορήματα or προβλήματα, viz. that the διὰ τί is sought, and the reply consists in giving the διότι or the αἰτία); Ἀπορημάτων Ὁμηρικῶν ζ′ (D. 118; AN. 106 ζ′; HEITZ, 258 sq., *Fr. Hz.* 129; ROSE, *Ar. Ps.* 148 sq., *Ar. Fr.* 137–175, p. 1501 sq.) or, as the *Vita Marc.* p. 2. names it, Ὁμ. ζητήματα; Προβλημάτων Ὁμηρικῶν ι′ (AN. *App.* 147; PTOL. 91; AMMON. *V. Ar.* 44; AMM. LAT. 54, probably a duplication of the ἀπορήματα); Ἀπορήματα Ἡσιόδου α′ (AN. *App.* 143); Ἀπορ. Ἀρχιλόχου, Εὐριπίδους, Χοιρίλου γ′ (*ibid.* 144). To these the Ἀπορήματα θεῖα (AN. 107) seem also to belong. The treatise: Εἰ δέ ποτε Ὅμηρος ἐποίησεν τὰς Ἡλίου βοῦς; (AN. *App.* 142), is no doubt only one of the Homeric problems.—Of these writings the ones which are more likely to have an Aristotelian origin are the Queries on Homer; but even these may have had later additions made to them. On the other hand the genuineness of the Πέπλος (AN. 105; AN. *App.* 169; ROSE, *Ar. Ps.* 563 sqq., *Ar. Fr.* 594–600, p. 1574 sq.; *Fr. Hz.* 309 sqq.; cf. BERGK, *Lyr. Gr.* 505 sqq.; MÜLLER, *Fragm. Hist.* ii. 188 sqq.) cannot be maintained. More ancient seems to be the book Π. μουσικῆς, which both DIOG. (116, 132) and AN. (104, 124) give us in two places, and which is identical with the musical problems noticed by LABBEUS, *Bibl. nova*, 116 (see BRANDIS, ii. b, 94); but it is no more genuine than the Π. καλοῦ (D. 69, AN. 63, Π. κάλλους).

[1] To these belong certain minor, mostly historical works, Ὀλυμπιονῖκαι α′ (D. 130, AN. 122); Πυθιονικῶν ἔλεγχοι α′ (D. 134 and probably also AN. 125); Πυθιονῖκαι α′ (D. 131, AN. 123, with the strange title, Πυθιονίκας βιβλίον ἐν ᾧ Μέναιχμον ἐνίκησεν); Πυθικὸς α′ (D. 133), possibly only a different title for the same writing; Νῖκαι Διονυσιακαὶ α′ (D. 135, AN. 126, Νικῶν Διον. ἀστικῶν καὶ ληναίων α′). About these writings cf. ROSE, *Ar. Ps.* 545 sqq., *Ar. Fr.* 572–574, p. 1587; HEITZ, 254 sq., *Fr. Hz.* 300 sq.; MÜLLER, *Hist. Gr.* ii. 182 sq.—Further Π. εὑρημάτων (CLEMENS, *Strom.* i. 308, A, where, however, an Aristotelian work with this title which could not be genuine seems to be designated: notes which may have come from the work are given by MÜLLER, *ibid.* 181 sq.).—Π. θαυμασίων ἀκουσμάτων quoted by ATHEN. (xii. 541; cf. Θαυμ. ἀκ. c. 96) and, with the title ἐν θαυμασίοις, perhaps also by ANTIGON. *Mirabil.* c. 25 (cf. Θαυμ. ἀκουσμ. c. 30), a 'collection of strange phenomena,' the genuineness of which cannot be admitted. For further information on this

these also there is no doubt that many spurious titles have crept in.

## B.—*General Questions touching the Aristotelian Writings.*

On a general survey of the works which are preserved or known to us as Aristotelian, it is evident that they—apart from the letters and poems—were of two different kinds. The component parts of our *Corpus Aristotelicum* are without exception didactic treatises in scientific form.[1] And almost all of these which can be called genuine are, as will be seen, connected together by express references in a way that is only to be explained by the theory that they were addressed to one circle of readers as the connected and mutually explanatory parts of one whole. It is quite different in the case of the writings which were afterwards styled 'hypomnematic'—notes, that is to say, made by

work see WESTERMANN, Παραδοξόγραφοι, p. xxv. sqq., and especially ROSE, *Ar. Libr. Ord.* 54 sq., *Ar. Pseud.* 279 sq., who refers the main body of the work, consisting of chaps. 1–114, 130–137, 115–129, 138–181, to the middle of the third century. An enlarged treatment of this, or a more extensive specimen of the same sort of work, is perhaps the Παράδοξα, from the second book of which Plut. (*Parall. Gr. et Rom.* c. 29, p. 312) quotes something which is not found in our Θαυμ. ἀκ.—Παροιμίαι α' (D. 138; cf. AN. 127), a collection of proverbs, the existence of which seems to be proved, *inter alia*, by ATHEN. ii. 60 d, although Heitz (*Verl. Schr.* 163 sq.; *Fragm.* 219) is doubtful whether there was an Aristotelian work on this subject. We cannot prove whether the references in Eustath. *in Od.* N 408 and SYNES. *Enc. Calvit.* c. 22 (*Ar. Fr.* No. 454, No. 2) belong to this or to other works. In addition to these there are two titles which are so indefinite that they furnish no safe clue to the contents of the writings to which they correspond: Παραβολαί (D. 126); Ἄτακτα (to which προβλήματα or ὑπομνήματα may be supplied) ιβ' (D. 127; cf. p. 96, foot).

[1] The 'wonderful stories' are perhaps the only exceptions, but they are not Aristotelian.

Aristotle merely for his own use, and therefore not thrown by him into any such literary form and unity as the works designed for publication.[1] None of the extant works which are genuine is of this class,[2] but several of those which are lost seem to have belonged to it.[3] From these two classes of works, however, there is to be distinguished a third. Cicero, Quintilian, and Dionysius of Halicarnassus praise Aristotle not only for scientific greatness, but equally for the grace and richness of his exposition—'the golden stream of his speech.'[4] This must have referred to works designed

[1] Simpl. (*in Categ.* Schol. in Ar. 24, a, 42): *ὑπομνηματικὰ ὅσα πρὸς ὑπόμνησιν οἰκείαν καὶ πλείονα βάσανον συνέταξεν ὁ φιλόσοφος*: these writings cannot, however, be taken as *πάντῃ σπουδῆς ἄξια*, and hence we may not draw from them any proofs for the Aristotelian doctrine: *ὁ μέντοι Ἀλέξανδρος τὰ ὑπομνηματικὰ συμπεφυρμένα φησὶν εἶναι καὶ μὴ πρὸς ἕνα σκοπὸν ἀναφέρεσθαι*, and for this very reason the others are distinguished from them as *συνταγματικά*. David (*Schol.* 24, a, 38): *ὑπομνηματικὰ μὲν λέγονται ἐν οἷς μόνα τὰ κεφάλαια ἀπεγράφησαν δίχα προοιμίων καὶ ἐπιλόγων καὶ τῆς πρεπούσης ἐκδόσεσιν ἀπαγγελίας.* Cf. HEITZ, *Verl. Schr.* 24 sq.

[2] The Problems, which might occur as an instance, cannot have been written down for his own use alone, since Aristotle often quotes them (see above, p. 96), thereby implying that they are known to his readers. Other instances, such as the Melissus, etc., cannot be supposed genuine. Even if it be true that particular portions of our *Corpus* were intended to serve as the basis for lectures, or were compiled from them, they would not on that account be merely 'hypomnematical writings.'

[3] *E.g.*, those mentioned on p. 62, n. 4, 5, and perhaps also the *Polities* (p. 101); whether the Περὶ τἀγαθοῦ is also one (as already noted on p. 61, n. 2 *fin.*), seems doubtful.

[4] CIC. *Top.* 1, 3: the works of Aristotle are not only recommended by their contents, *sed dicendi quoque incredibili quadam cum copia tum etiam suavitate. De Invent.* ii. 2, 6 (on the Συναγωγὴ τεχνῶν): Aristotle has left the old orators *suavitate et brevitate dicendi* far behind. *De Orat.* i. 11, 49: *si item Aristoteles, si Theophrastus, si Carneades . . . eloquentes et in dicendo suaves atque ornati fuere. De Fin.* i. 5, 14 (on Epicurus): *quod ista Platonis Aristotelis Theophrasti orationis ornamenta neglexerit. Acad.* ii. 38, 119: *veniet flumen orationis aureum fundens Aristoteles.* QUINTIL. *Inst.* xi. 83: *quid Aristotelem? Quem dubito*

by him for publication. It is not applicable to any of those which are now extant; and of these, indeed, the two Latin writers probably knew but a small part.[1] We are driven to suppose, therefore, that it was to other works, lost to us, that they ascribed this kind of excellence. The critic who judges of literary form by purely scientific criteria will find, it is true, much to praise in our extant Aristotle. He will acknowledge the apt discrimination of all his ideas, the inimitable precision and compactness of his diction, and his masterly handling of an established terminology. But of the qualities which Cicero emphasises, or any graceful movement of a rich and rolling eloquence, he will find even in the most popular of the extant books but little trace; while in other parts the dry methods of treatment, the rough brevity of statement, the involved construction of long sentences, often broken by anacolutha and parentheses, stand in plain contradiction to Cicero's description. We can, however, gather for ourselves, even from the scanty fragments of the lost books, that some of these were written in a style far more rich and

*scientia rerum an scriptorum copia an eloquendi suavitate . . . clariorem putem.* DIONYS. *De Verb. Cop.* 24: of the philosophers, Democritus, Plato, and Aristotle are the best as to style. *De Cens. Vet. Script.* 4: παραληπτέον δὲ καὶ Ἀριστοτέλη εἰς μίμησιν τῆς τε περὶ τὴν ἑρμηνείαν δεινότητος καὶ τῆς σαφηνείας καὶ τοῦ ἡδέος καὶ πολυμαθοῦς.

[1] Except the *Topics* and *Rhetoric*, we have no reason for supposing that any of them knew by personal reading the extant books. Of the others, however, Cicero used several of the writings mentioned on p. 55 sqq., the books on Philosophy, the *Eudemus*, the *Protrepticus*, perhaps also the Πολιτικὸς, Π. βασιλείας and Π. πλούτου; cf. *Fin.* ii. 13, 40; *Acad.* ii. 38, 119; *N. D.* ii. 15, 42, 16, 44, 37, 95, 49, 125; *Divin.* i. 25, 53; *Fragm. Hort. apud* Augustine *c. Jul.* iv. 78; *Fin.* v. 4, 11; *Ad Quint. Fr.* iii. 5; *Ad Att.* xii. 40, 2, xiii. 28, 2; *Off.* ii. 16, 56: and above, p. 60, n. 1.

ornate, and approached far more closely to the literary graces of the Platonic Dialogues, than any of the scientific treatises now contained in our *Corpus*.[1] This difference is to be explained, not merely by the earlier date of the writings in question, but also by the fact that they were not intended to serve the same purpose as the others, nor designed for the same audiences.[2]

Aristotle himself occasionally refers to certain statements of his doctrine, published by him, or then in common use, in terms which seem to imply that a portion of his writings (including these writings in which the references in question occur) were not in the same sense given to the public.[3] And from his

[1] On this point see what is preserved in Nos. 12–14, 17 sq., 32, 36, 40, 48, 49, 71, 72 of the Fragments (Academy edition) from the *Eudemus*, *Protrepticus*, Π. φιλοσοφίας, Π. δικαιοσύνης, and above, p. 56, n. 2.

[2] We shall discuss this immediately.

[3] *Poet.* 15, 1454, b, 17: εἴρηται δὲ περὶ αὐτῶν ἐν τοῖς ἐκδεδομένοις λόγοις ἱκανῶς. *De An.* i. 4 *init.*: καὶ ἄλλη δέ τις δόξα παραδέδοται περὶ ψυχῆς, πιθανὴ μὲν πολλοῖς . . . λόγους ὥσπερ δ' εὐθύνας (for which Bernays, *Dial. d. Ar.* 15 sqq, erasing λόγους, reads: ὥσπερ εὐθύνας δὲ) δεδωκυῖα καὶ τοῖς ἐν κοινῷ γιγνομένοις λόγοις· ἁρμονίαν γάρ τινα αὐτὴν λέγουσι, &c. In the first of these places, Bernays says (*ibid.* 13) that 'published' here means the same as 'already published' (the same explanation of the words is given by Rose, *Ar. Ps.* 79), yet one may well doubt whether this gloss is allowable. The predicate ἐκδεδομένοι would certainly not be there without a purpose, but is meant to distinguish the λόγοι ἐκδεδομένοι from certain other λόγοι. Neither can we translate ἐκδεδομένοι in such a way as to make 'the writings published by me' a mere periphrasis for 'my writings;' partly because such a turn of phrase is not found in Aristotle. When he refers, without indicating a particular work, to something that has gone before, he is accustomed to say merely, ἐν ἄλλοις, ἐν ἑτέροις or πρότερον. Again the fact that he does not say ὑπ' ἐμοῦ ἐκδεδομένοι shows that the emphasis falls on ἐκδεδομένοι, as such, and that the λόγοι ἐκδεδομένοι are meant as an antithesis to μὴ ἐκδεδομένοι. Only we have no right to assume that things μὴ ἐκδεδομένοι mean things published later. The anti-

commentators we further learn that one of the points

thesis to 'published' is not 'later published,' but 'not published;' and from the perfect ἐκδεδομένοι to read 'such as had already been published at the time of the writing of the *Poetics*, and so were earlier than that work,' is shown to be impossible by the reflection of UEBERWEG on this passage (*Arist. üb. d. Dichtk.*, p. 75) that every author puts himself, in regard to the reader, in the time at which his work will be in the reader's hands. Hence, if the *Poetics* were to be laid before the whole reading world, *i.e.* published, just like the λόγοι to which they referred, they would not be designated in contradistinction to the latter, by the predicate ἐκδεδομένοι, since each of them would be, in relation to their reader, equally a λόγος ἐκδεδομένος. Rose wished to refer the λόγοι ἐκδεδ., first to former passages in the *Poetics* (*Ar. Libr. Ord.* 130), and later (*Ar. Pseud.* 79) to the *Rhetoric*, but he was subsequently (*Ar. Ps.* 714) right in withdrawing both, since the discussion for which the *Poetics* refer to the λόγοι ἐκδεδ. is found neither in the *Rhetoric* nor in the *Poetics* (cf. BERNAYS, *ibid.* 138): and, even apart from this, the latter could never have been so indicated. Nor can we on the other hand (as ROSE, *Ar. Ps.* 717, maintains) refer the expression to writings on Poetry by the Platonic school, for we clearly must confine it to Aristotelian writings: and in the second passage, *De An.* i. 4, the λόγοι ἐν κοινῷ γιγνόμενοι cannot be understood (as TORSTRIK, *Arist. de An.* 123 supposes, he being perhaps preceded by the authors of the variant λεγομένοις instead of γιγνομ.) of conversations, such as would occur in educated circles, or (as Rose, *Ar. Ps.* 717, thinks) of expressions of opinion coming from the Platonic school; for the εὐθύνας δεδωκυῖα refers to some criticism, known to the reader, of the supposition that the soul is the harmony of its body, and cannot mean vague conversations of third persons (cf. also BERNAYS, *ibid.*, 18 sq.). Neither can one refer them to oral statements made by Aristotle to his pupils (PHILOP.: see following note), partly because Aristotle never elsewhere refers to such statements, and in a treatise which, though perhaps primarily intended as a text-book for his school, yet gives no indication anywhere of being meant only for his personal pupils, he could not well appeal to them; partly because the Philosopher had really inserted the criticism referred to in one of his own writings (cf. following note). The latter fact indicates that it is wrong (as SIMPL. does; see following note) to refer the λόγοι ἐν κοινῷ γιγν. to the Platonic *Phædo*, for which this expression would not be a sufficient indication, nor would it correspond (cf. BERNAYS, p. 20) with the manner in which it is in other places mentioned (cf. *Meteorol.* ii. 2, 355, b, 32). Finally, though Ueberweg (*Gesch. d. Phil.* i. 173, 5th ed.) understands by the λόγοι ἐν κ. γιγν. (extending the explanation of Philoponus) discussions which occurred in actual conversations, or in writings arranged in the

to which he so refers was to be found in the *Eudemus*.[1] We find other and more frequent references of his to the 'Exoteric Discourses' as the place where he had dealt with such and such a subject.[2] Opinions, however, differ as to the meaning of that name and the

form of dialogues, it seems clear that the latter could not be so named, and that there was here no reason for mentioning the dialogue form of such discussions. From the point of view of grammar, owing to the present tense of γιγνομένοις (to which BONITZ, *Ind. Arist.* 105, a, 46, rightly calls attention), they cannot be explained as: 'the speeches submitted (*i.e.* which have been submitted) to publication,' for in that case it would have been γενομένοις. It can only mean, as Bernays translates it in his *Dial. d. Arist.* 29, 'the discourses existing in a state of publication, available for the use of all,' taking the ἐν κοινῷ here in the same sense as in the expressions: ἐν κοινῷ κατατίθεσθαι, ἐν κοινῷ ἀφιέναι (*in medio relinquere*, *Metaph.* i. 6, 987, b, 14). A similar meaning to that of the λόγοι ἐν κοινῷ γιγνόμενοι seems to be attached to ἐγκύκλια or ἐγκύκλια φιλοσοφήματα, of which mention is made in *Eth.* i. 3, 1096, a, 2 (καὶ περὶ μὲν τούτων ἅλις· ἱκανῶς γὰρ καὶ ἐν τοῖς ἐγκυκλίοις εἴρηται περὶ αὐτῶν) and *De Cælo*, i. 9, 279, a, 30 (καὶ γὰρ καθάπερ ἐν τοῖς ἐγκυκλίοις φιλοσοφήμασι περὶ τὰ θεῖα πολλάκις προφαίνεται τοῖς λόγοις ὅτι τὸ θεῖον ἀμετάβλητον ἀναγκαῖον εἶναι, &c.). Ἐγκύκλιος can, just as well as ἐν κοινῷ γιγνόμενος, mean *in medio positus* —Bernays' rendering, *Dial. d. Ar.* 124, 'writings in the common strain,' is not so appropriate. The phrase is so explained by Simplicius (in *De Cælo*, Schol. 487, a, 3: where he says that Aristotle uses ἐγκύκλ. φιλ. to signify τὰ κατὰ τὴν τάξιν ἐξ ἀρχῆς τοῖς πολλοῖς προτιθέμενα, *i.e.* the ἐξωτερικά). We also see from *Ar. Fr.* 77, 1488, b, 36 sqq., and *Fr.* 15, 1476, b, 21, that the matter for which Aristotle refers to the ἐγκύκλια, was actually treated in two of his Dialogues. Cf. BERNAYS, *ibid.* 84 sqq., 93 sq., 110 sqq.

[1] It is shown by the passages quoted in Rose, *Ar. Fr.* 41, p. 1481 sq., and Heitz, *Ar. Fr.* 73, p. 51, from Philoponus, Simplicius, Themistius, and Olympiodorus (the common source for whom may have been Alexander), that Arist. in the *Eudemus*, after following the *Phædo*, devoted a searching examination to the theory that the soul is the harmony of its body, the principal heads of which examination are given by them. Hence the passages in question must refer to this dialogue, although Philoponus (*De An.* E, 2) leaves us the choice between it and the ἄγραφοι συνουσίαι πρὸς τοὺς ἑταίρους, and Simplicius (*De An.* 14, a) connects it with the *Phædo*.

[2] All the passages are quoted below.

relation of these 'Exoteric Discourses' to our extant *Corpus*. The ancients who mentioned them always referred to them as a separate class of Aristotle's works, distinguished from the technical scientific treatises by a less strict method of treatment.[1] But they differ among themselves as to details. Cicero[2] and Strabo[3] speak of the exoteric works in general terms as popular statements.[4] The former, however, is unmistakeably thinking only of the Dialogues,[5] which we also find described as 'exoteric' in Plutarch.[6] According to Gellius, the treatises which dealt with

[1] The only exceptions are two late Byzantine and altogether untrustworthy interpreters of the *Ethics*, Eustratius (90, a) and the Pseudo-Andronicus (Heliodorus, *circ.* 1367, cf. p. 69, n. 1), the former of whom understands by ἐξωτερικοὶ λόγοι the common opinion, the latter, oral instruction.

[2] *Fin.* v. 5, 12: about the highest good, Aristotle and Theophrastus have written *duo genera librorum, unum populariter scriptum, quod* ἐξωτερικὸν *appellabant, alterum limatius* [ἀκριβεστέρως, in a more severe style], *quod in commentariis reliquerunt*,' but in essentials they both agree.

[3] XIII. 1, 54, p. 609: because the Peripatetics, after Theophrastus, had not his works and those of Aristotle, πλὴν ὀλίγων καὶ μάλιστα τῶν ἐξωτερικῶν, they happened μηδὲν ἔχειν φιλοσοφεῖν πραγματικῶς [going deeply into the subject, scientific] ἀλλὰ θέσεις ληκυθίζειν.

[4] Likewise SIMPL. *Phys.* 2, b: the Aristotelian writings are divided into acroamatic and exoteric, οἷα τὰ ἱστορικὰ καὶ τὰ διαλογικὰ καὶ ὅλως τὰ μὴ ἄκρας ἀκριβείας φροντίζοντα.—PHILOP. *De An.* E, 2 (*ap.* STAHR, *Arist.* ii. 261): τὰ ἐξωτερικὰ συγγράμματα, ὧν εἰσι καὶ οἱ διάλογοι . . . ἅπερ διὰ τοῦτο ἐξωτερικὰ κέκληται ὅτι οὐ πρὸς τοὺς γνησίους ἀκροατὰς γεγραμμένα.

[5] Cf. *Ad Att.* iv. 16, 2: *quoniam in singulis libris* [of the discourse on the State] *utor proœmiis, ut Aristoteles in iis quæ* ἐξωτερικοὺς *vocat*. In contradistinction to the Dialogues, the strictly scientific works are called (see preceding note) *commentarii*, continuous expositions, corresponding to the αὐτοπρόσωπα or ἀκροατικὰ of the Greek interpreters (see p. 112, n. 1, and 113, n. 2).

[6] *Adv. Col.* 14, 4, p. 1115: Aristotle everywhere attacks the Ideas: ἐν τοῖς ἠθικοῖς ὑπομνήμασιν (synonymous with Cicero's *commentarii*; see preceding note), ἐν τοῖς φυσικοῖς, διὰ τῶν ἐξωτερικῶν διαλόγων.

Rhetoric, Topics, and Politics were named 'exoteric,' and those which related to Metaphysics, Physics, and Dialectics 'acroatic,'[1] the reason being that the former, as Galen explained, were meant for everyone; the latter only for the philosopher's scholars.[2] Alexander, in a letter which appears in Andronicus,[3] is supposed to complain to his master of the publication of the 'acroatic' writings; but inasmuch as Aristotle is expressly stated to have published them, the notion that *he* objected to their publication cannot have been in the mind of the writer of that fragment. At a later time we do find this assumption also,[4] and we find connected with it the further theory that Aristotle purposely adopted in his 'acroatic'

[1] *N. A.* xx. 5: Aristotle's lectures and writings were divided into two classes, the ἐξωτερικὰ and the ἀκροατικά. Ἐξωτερικὰ *dicebantur quæ ad rhetoricas meditationes facultatemque argutiarum civiliumque rerum notitiam conducebant,* ἀκροατικὰ *autem vocabantur in quibus philosophia remotior subtiliorque agitabatur quæque ad naturæ contemplationes disceptationesque dialecticas pertinebant.* In the Lyceum the morning was devoted to the latter, the evening to the former (cf. p. 27, n. 3). *Libros quoque suos, earum omnium rerum commentarios, seorsum divisit, ut alii exoterici dicerentur, partim acroatici.*

[2] *De Subst. Fac. Nat.* vol. iv. 758 K: Ἀριστοτέλους ἢ Θεοφράστου τὰ μὲν τοῖς πολλοῖς γεγραφότων, τὰς δὲ ἀκροάσεις τοῖς ἑταίροις.

[3] Cf. GELL. *ibid.*; PLUT. *Alex.* 7; *vide supra*, p. 22, n. 1. The wording: οὐκ ὀρθῶς ἐποίησας ἐκδοὺς τοὺς ἀκροατικοὺς τῶν λόγων, shows that the distinction between the λόγοι ἀκροατικοὶ and ἐξωτερικοὶ must have been known to the author of the letter.

[4] Thus PLUT. *Alex.* c. 7: ἔοικε δ' Ἀλέξανδρος οὐ μόνον τὸν ἠθικὸν καὶ πολιτικὸν παραλαβεῖν λόγον, ἀλλὰ καὶ τῶν ἀποῤῥήτων καὶ βαρυτέρων [βαθυτ.] διδασκαλιῶν, ἃς οἱ ἄνδρες ἰδίως ἀκροαματικὰς καὶ ἐποπτικὰς [as in mysteries] προσαγορεύοντες οὐκ ἐξέφερον εἰς πολλοὺς, μετασχεῖν. CLEMENS, *Strom.* v. 575, A: not only the Pythagoreans and the Platonists, but all schools have secret doctrines and secret writings: λέγουσι δὲ καὶ οἱ Ἀριστοτέλους τὰ μὲν ἐσωτερικὰ εἶναι τῶν συγγραμμάτων αὐτῶν [-οῦ] τὰ δὲ κοινά τε καὶ ἐξωτερικα On the same theory, in the *Rhet. ad Alex.* c. 1, 1421, a, 26 sq., Aristotle is requested by Alexander to observe the strictest secrecy with regard to this work, while Aristotle, on his part, lays a reciprocal duty of silence on Alexander.

works a form of exposition which must make them unintelligible to any but his scholars;[1] while at the same time it is said that it was here only that he disclosed his views in their full logical connection.[2] On this theory the 'exoteric' writings were broadly distinguished from the 'acroatic,' just by the fact that they were intended for a wider public, and that they were therefore put in a more popular form, did not cover the more difficult classes of inquiry, and substituted for a severe and scientific method of proof one more accommodated to general comprehension.[3]

[1] This idea is expressed in the answer of Aristotle to Alexander (see GELL. *ibid.*), when he replies to the reproach of the latter with regard to the ἀκροατικοὶ λόγοι: ἴσθι οὖν αὐτοὺς καὶ ἐκδεδομένους καὶ μὴ ἐκδεδομένους· ξυνετοὶ γάρ εἰσι μόνοις τοῖς ἡμῶν ἀκούσασιν. See also THEMIST. *Or.* xxvi. 319, A sq., where it is said that Aristotle did not find the same discourses suitable for the masses as for the philosophers, and therefore withdrew the highest secrets of his teaching (the τέλεα ἱερὰ, the μυστικὸν) from the former by using obscure language. SIMPL. *Phys.* 2, b, referring to the letters just mentioned, says: ἐν τοῖς ἀκροαματικοῖς ἀσάφειαν ἐπετήδευσε, &c. For the same view see *Categ.* Schol. 27, a, 38, DAVID, *Categ.* Schol. 22, a, 20; 27, a, 18 sq. In the same sense LUCIAN, *V. Auct.* c. 26, calls Aristotle διπλοῦς, ἄλλος μὲν ὁ ἔκτοσθεν φαινόμενος ἄλλος δὲ ὁ ἔντοσθεν, exoteric and esoteric.

[2] Alexander remarks, *Top.* 52, that Aristotle speaks at one time λογικῶς in order to unfold the truth as such, at another διαλεκτικῶς πρὸς δόξαν. He instances the *Topics*, the ῥητορικὰ and the ἐξωτερικά. 'καὶ γὰρ ἐν ἐκείνοις πλεῖστα καὶ περὶ τῶν ἠθικῶν καὶ περὶ τῶν φυσικῶν ἐνδόξως λέγεται.' But the example of the *Topics* and the *Rhetoric* shows that this only refers to the basis of the opinions laid down in these writings, the argument from the universally acknowledged (the ἔνδοξον), and not to the teaching as such. The later writers, as a rule, express themselves in the same sense; thus SIMPL. *Phys.* 164, a: ἐξωτερικὰ δέ ἐστι τὰ κοινὰ καὶ δι' ἐνδόξων περαινόμενα ἀλλὰ μὴ ἀποδεικτικὰ μηδὲ ἀκροαματικά. As to AMMON. and DAVID, see following note; and cf. PHILOP. *Phys.* p. 4. On the other hand DAVID, *Schol. in Ar.* 24, b, 33, changes the statement of Alexander (which he quotes in order to refute it) into: ὅτι ἐν μὲν τοῖς ἀκροαματικοῖς τὰ δοκοῦντα αὐτῷ λέγει καὶ τὰ ἀληθῆ, ἐν δὲ τοῖς διαλογικοῖς τὰ ἄλλοις δοκοῦντα, τὰ ψευδῆ.

[3] Besides the testimony already adduced, the statements found in the Neoplatonic com-

The theory just mentioned can be traced as far back as Andronicus, perhaps even farther;[1] but this does not put its correctness beyond question. It is, however, confirmed in the main, even if it requires correction in one point or another, by the utterances of Aristotle himself as to the 'Exoteric Discourses.' It is true that in a general sense he may describe as 'exoteric' any topic which does not belong to the inquiry immediately

mentators go to establish this point. Thus the so-called Ammon. in *Categ.* 6, b sqq. (see also STAHR, *Aristotelia*, ii. 255 sqq.), who, after some other divisions of the the Aristotelian writings, among 'syntagmatic' ones distinguishes αὐτοπρόσωπα καὶ ἀκροαματικὰ and διαλογικὰ καὶ ἐξωτερικά. The former are written πρὸς γνησίους ἀκροατὰς, the latter πρὸς τὴν τῶν πολλῶν ὠφέλειαν; in the former Aristotle expresses his own opinion with a strictly scientific argument, in the latter τὰ δοκοῦντα αὐτῷ, ἀλλ' οὐ δι' ἀποδεικτικῶν ἐπιχειρημάτων, καὶ οἷς οἷοί τέ εἰσιν οἱ πολλοὶ ἐπακολουθεῖν. Similarly, only at greater length, DAVID, *Schol.* 24, a, 20 sqq., who likewise divides the συνταγματικὰ into αὐτοπρόσωπα or ἀκροαματικὰ and διαλογικὰ ἃ καὶ ἐξωτερικὰ λέγονται and considers the former to have been written πρὸς τοὺς ἐπιτηδείους τῇ φιλοσοφίᾳ, the latter πρὸς ἀνεπιτηδείους πρὸς φιλοσοφίαν, and hence the former δι' ἀναγκαστικῶν λόγων, the latter διὰ πιθανῶν. Cf. p. 111, n. 4.

[1] In proof of this statement we cannot attach so much importance to the passage just given from David as Heitz does (*Verl. Schr.* 25 sq.). The fact that David (24, b, 5) expressly appeals to Ammonius (Π. ἑρμηνείας) and to the commentary on the *Categories* passing under Ammonius' name (which, although in its present form it does not come from Ammonius, yet seems to have originated in one written by him), indicates that Ammonius was David's proximate authority; and though he (Ammonius) certainly made use of earlier writers (and principally Alexander, whom David at 24, b, 33 attacks, and from whom his quotation of the Aristotelian *Eudemus* is probably taken, like that in PHILOP. *De An.* E, 2 sq.; *Ar. Fr.* p. 1481, No. 41), still we do not know how much has been added to their testimony. On the other hand we must trace the statements in Cicero, Strabo, and Gellius (*vide supra*, p. 111, n. 2–6, 112, n. 1), to Tyrannio and Andronicus, and the letters mentioned on p. 112, n. 3 etc., prove that the latter was aware of the distinction between exoteric and acroatic writings, and of the suggestion that the last mentioned were only intended to be understood by the pupils of the philosopher.

in hand,[1] or any discussion which does not go very deeply into the subject.[2] It is also true that the title does not always and necessarily denote a distinct class of *writings*.[3] Nevertheless there are passages where we have every reason to refer it to such a class;[4] and that

[1] *Polit.* i. 5, 1254, a, 33; ἀλλὰ ταῦτα μὲν ἴσως ἐξωτερικωτέρας ἐστὶ σκέψεως. Similarly, *ibid.* ii. 6, 1264, b, 39; 'in the *Republic* Plato has only imperfectly treated of legislation, τὰ δ' ἄλλα τοῖς ἔξωθεν λόγοις πεπλήρωκε τὸν λόγον.' The term 'ἔξωθεν λόγοι' covers in this case writings of the most speculative character. In like manner Eudemus *Fr.* 6 (SIMPL. *Phys.* 18, b), where instead of the ἔχει δ' ἀπορίαν . . . . ἴσως δὲ οὐ πρὸς τὸν λόγον of Aristotle (*Phys.* i. 2, 185, b, 11) we read: ἔχει δὲ αὐτὸ τοῦτο ἀπορίαν ἐξωτερικήν.

[2] *Phys.* iv. 10, *init.*: πρῶτον δὲ καλῶς ἔχει διαπορῆσαι περὶ αὐτοῦ [τοῦ χρόνου] καὶ διὰ τῶν ἐξωτερικῶν λόγων. The ἐξωτ. λόγοι here mean the discussion which follows immediately, and which is called exoteric (in the same way as Aristotle, in other places, puts the logical in opposition to the physical, *vid. infra*, p. 174, n. 2), because it does not aim at a strict and adequate notion of time (the τί ἐστιν ὁ χρόνος, 218, a, 31), but only takes into consideration certain preliminary properties of it. The question is not here of exoteric *writings*; but Prantl is none the less wrong (*Arist. Physik*, 501, 32) in maintaining that by the exoteric discourses we are to understand, not only in the present instance, but everywhere, only those conversations on interesting subjects which at that time were everywhere in vogue even at social gatherings. That this does not fit other passages will be shown immediately; as for the passage in question, such a rendering is forbidden by the strictly dialectical and genuinely Aristotelian style of the discussions from p. 217, b, 32 to p. 218, a, 30.

[3] Thus, besides the passage given in the preceding note from the *Physics*, the Eudemian *Eth.* ii. 1, 1218, b, 33, introduces the division of possessions into the external and the spiritual with the remark: καθάπερ διαιρούμεθα καὶ ἐν τοῖς ἐξωτερικοῖς λόγοις. In the parallel passage, *Eth. N.* i. 8, 1098, b, 10, Aristotle says: he wishes to speak about happiness καὶ ἐκ τῶν λεγομένων περὶ αὐτῆς, by which, according to the context, only the prevailing views concerning happiness can be meant. It is to these, therefore, that the ἐξωτ. λόγοι of Eudemus must also refer.

[4] This is true especially of *Polit.* vii. i. 1323, a, 21: νομίσαντας οὖν ἱκανῶς πολλὰ λέγεσθαι καὶ τῶν ἐν τοῖς ἐξωτερικοῖς λόγοις περὶ τῆς ἀρίστης ζωῆς καὶ νῦν χρηστέον αὐτοῖς. That by this he does not mean mere oral expressions of opinion in the conversations of daily life is clearly shown by what immediately follows. For Aristotle continues: ὡς ἀληθῶς γὰρ πρός γε μίαν διαίρεσιν

the writings referred to were of a more popular type than our extant Aristotelian texts is made probable

οὐδεὶς ἀμφισβητήσειεν, etc. His point may be stated thus: 'from the arguments in the ἐξωτερικοὶ λόγοι, it will be universally recognised that the conditions of happiness include not only external and bodily good things but also and pre-eminently spiritual good things: although it is true that in common life we are wont to content ourselves with far too small a proportion of such spiritual good.' This line of reasoning necessarily implies that the ἐξωτερικοὶ λόγοι in question, with which the current opinion of society is said to be in partial agreement, are not the same as any form of expression of that current opinion (cf. BERNAYS, *Dial. d. Arist.* 40). Then, again, the words: πρός γε μίαν διαίρεσιν οὐδεὶς ἀμφισβητήσειεν point to definite explanations, set down in writing, not merely existing in the intangible medium of oral conversation. It would be easier to connect them with oral discourses of Aristotle himself (as ONCKEN does in *Staatsl. d. Arist.* i. 44–59). We cannot, however, base this view on the present λέγομεν (together with the διοριζόμεθα, *Pol.* iii. 6, 1278, b, 32), since Aristotle not only quotes the writings of others very frequently in this way, but not unfrequently even his own; cf. *Pol.* vii. 13, 1332, a, 8: φαμὲν δὲ καὶ ἐν τοῖς ἠθικοῖς; *Phys.* viii. 1, 251, a, 9; φαμὲν δή, etc. (*Phys.* iii. 1); *De Cœlo*, i. 7, 275, b, 21; λόγος δ' ἐν τοῖς περὶ κινήσεως (ἐστίν); *Metaph.* v. 30 *fin.*; λόγος δὲ τούτου ἐν ἑτέροις; *Eth.* vi. 3, 1139, b, 26; ὥσπερ καὶ ἐν τοῖς ἀναλυτικοῖς λέγομεν; *ibid.* 32: ὅσα ἄλλα προσδιοριζόμεθα ἐν τοῖς ἀναλυτικοῖς. And, on the other hand, the νῦν χρηστέον αὐτοῖς is adverse to this explanation. That is meant to designate what follows as something extracted from the exoteric discourses; but Aristotle would be far more likely to use such a formula if he was quoting something from a former work than if he was merely repeating in writing what he had already orally delivered. This latter, from the nature of the case, he must have had occasion to do as often as a modern university teacher does it. The fact, then, that he expressly mentions that he is 'making an extract from the ἐξωτερικοὶ λόγοι,' points, as in the *De Cœlo*, ii. 13, 295, a, 2, and *Meteor.* iii. 2, 372, b, 10 (where some of the writings which we possess are quoted with the same χρηστέον) to an existing written work. And an *Aristotelian* writing must be meant, since that which follows out of the ἐξωτερικοὶ λόγοι sounds perfectly Aristotelian, and forms a whole with what Aristotle gives in his own name (ἡμεῖς δὲ ἐροῦμεν, l. 38). Lastly, although something similar to that which is here quoted from the ἐξωτ. λόγοι is found in some passages of the *Ethics* (i. 6 sqq. x. 6 sqq.), which Zeller, in his second edition, brought into connection with this quotation, yet he now concedes to Bernays (*ibid.* 71 sq.; cf. ONCKEN, *ibid.* 43, 5; VAHLEN, *Arist. Aufs.* ii. 6) that Aristotle would not by the designation

both by the express distinction that is drawn between

ἐξωτερικοὶ λόγοι have mentioned the *Ethics*, which in the *Politics* he repeatedly quotes as ἠθικὰ, and puts in the closest connection with them (*vid.* p. 127, n. 2, of Zeller's 2nd ed.). Bernays' theory (73 sqq.), that the first chapter of the seventh book of the *Politics* strikingly diverges from the usual style of his scientific works, and bears distinct traces of having been extracted from a dialogue can scarcely be supposed after Vahlen's forcible objections (*Arist. Aufs.* ii.) to be established; Zeller, however, feels bound to agree with Bernays that by the 'exoteric discourses' in this passage is meant a written work of the philosopher's which is lost to us, and which Aristotle here seems to follow pretty closely, for which very reason he refers to it, and not to the *Ethics*, though the parallel passages in the latter were closely connected with it in meaning. — Less convincing with regard to this, in spite of what Bernays says to the contrary (*ibid.* 38, 51 sqq.), appears to be *Polit.* iii. 6, 1278, b, 30: ἀλλὰ μὴν καὶ τῆς ἀρχῆς τοὺς λεγομένους τρόπους [the δεσποτεία, the οἰκονομικὴ, and the πολιτικὴ ἀρχὴ] ῥᾴδιον διελεῖν· καὶ γὰρ ἐν τοῖς ἐξωτερικοῖς λόγοις διοριζόμεθα περὶ αὐτῶν πολλάκις. These words, looked at in themselves, might refer not only (as ONCKEN, *ibid.*, suggests) to oral disquisitions, but also (by taking the διοριζόμεθα as the collective 'we') to conversations not connected with the School or even with scientific philosophy. That Aristotle here 'refers to the ἐξωτ. λόγοι, not for the existence' (more correctly 'distinction') 'of different kinds of dominion, but for the *exact limitation* of their difference' (as Bernays, p. 38 asserts), cannot be inferred from the διοριζόμεθα, since this expression designates not only the *exact* distinction, the 'carefully-weighed logical antithesis,' but *any* kind of distinction whatever. If we compare with it the perfectly analogous use of λέγομεν, διοριζόμεθα, &c., in the passages given above (p. 115), we shall be prepared to give the same meaning to the διοριζόμεθα here, and when we have persuaded ourselves, from other passages, that Aristotle names certain writings λόγοι ἐξωτερικοί, the passage appears to fit this interpretation. (And there are certainly some among the lost Aristotelian writings in which the distinction here touched upon may have been given; particularly the πολιτικὸς and Π. βασιλείας: *v. supra*, p. 58, n. 1, and 60, n. 1).—The like is true of *Eth.* vi. 4 *init.*: ἕτερον δ' ἐστὶ ποίησις καὶ πρᾶξις· πιστεύομεν δὲ περὶ αὐτῶν καὶ τοῖς ἐξωτερικοῖς λόγοις. The connection here unquestionably *allows* us to suppose that the words refer to discussions in Aristotelian writings of a character different from that of the scientific works which we possess, as for instance the Dialogue on the Poets or *Gryllos*; but that it *forbids* any other supposition Bernays (p. 39, 57 sqq.) has not made out. If anybody wished to give to the passage, instead of the narrow meaning assumed by Bernays, the broader one, 'this has already been proved in my other writings,' neither the

meaning of ἐξωτερικὸς nor the context would stand in his way, since the rendering of the former would be analogous to the examples quoted on p. 115, n. 1, and as regards the latter the question whether Aristotle here refers to scientific or popular writings, is indifferent. If, on the other hand, we wished to understand the ἐξωτ. λόγοι of the λεγόμενα—'what is said by others'—we could parallel the expression by an appeal to Eudemus (see preceding note). Bernays, referring to this, finds it impossible to believe that we are to draw the explanation of such a corner-stone of the Peripatetic system as the connection of ποίησις and πρᾶξις, from the common conversation of well educated persons: but if so, he ought to find it no less absurd to draw from the very same source an explanation of the centre of gravity of all Ethics, the notion of Εὐδαιμονία. And yet we find in *Eth.* i. 8, *init.* incontestably: σκεπτέον δὴ περὶ αὐτῆς . . . καὶ ἐκ τῶν λεγομένων περὶ αὐτῆς. This may not mean that we are to seek *the scientific definition* of happiness 'in the conversation of the educated;' but neither would this be affirmed in *Eth.* vi. 4 *init.* about that of ποίησις and πρᾶξις, if we were to understand the ἐξωτ. λόγοι in this passage of the λεγόμενα. The appeal to universal conviction would be to establish a *general* distinction of ποίησις from πρᾶξις; and this is Aristotle's way: τῷ γὰρ ἀληθεῖ πάντα συνᾴδει τὰ ὑπάρχοντα (*Eth.* i. 8).—Much more definitely may we discern in *Eth.* i. 13, 1102, a, 26 an intention of appealing to some Aristotelian writings in the words: λέγεται δὲ περὶ αὐτῆς [sc. τῆς ψυχῆς] καὶ ἐν τοῖς ἐξωτερικοῖς λόγοις ἀρκούντως ἔνια καὶ χρηστέον αὐτοῖς. οἷον τὸ μὲν ἄλογον αὐτῆς εἶναι τὸ δὲ λόγον ἔχον. For though it is by no means so incredible as Bernays, p. 36, believes, that the distinction between the rational and the irrational in the soul may have made its way from the Platonic school into wider circles (Epicharmus, at a much later period, comes very near to it with his νοῦς ὁρᾷ, &c.), and though it could scarcely be said to be an actual impossibility to interpret the words ἐξωτ. λόγοι as referring to opinions current outside the school, yet the introductory words here too much resemble those given above from *Polit.* vii. 1, and the λέγεται ἀρκούντως ἔνια καὶ νῦν χρηστέον αὐτοῖς here points too obviously to written discussions, for us to be able to refer this quotation to mere λεγόμενα. If it refers to an Aristotelian work, this must be one of the lost writings—most probably the *Eudemus*; for the quotation does not agree with Π. ψυχῆς iii. 9, 432, a, 22 sqq., and this work would not be cited by such a reference, but, as always in other places, by 'ἐν τοῖς περὶ ψυχῆς.'—Neither in *Metaph.* xiii. 1, 1076, a, 28 (on the Ideas as such he will only speak ἁπλῶς καὶ ὅσον νόμου χάριν—τεθρύλληται γὰρ τὰ πολλὰ καὶ ὑπὸ τῶν ἐξωτερικῶν λόγων) can we understand by the ἐξωτ. λόγοι oral discussions of others. It must mean the work of Aristotle himself, since this alone could dispense him from a fuller criticism of the doctrine of Ideas; and that we are to look for such work neither in the philo-

the exoteric and the scientific treatises,[1] and by the terms that are used in describing the former.[2] It is not to be

sopher's doctrinal discussions nor in his strictly scientific writings is suggested not only by the designation ἐξωτ. λόγοι, but also by the καὶ (καὶ ὑπὸ τ. ἐξ. λ.), by which the ἐξωτ. λόγοι are distinguished from other not exoteric λόγοι. Still more clearly does this appear from Eudemus, when the latter, probably remembering this passage, in *Eth.* i. 8, 1217, b, 22 says likewise of the Ideas: ἐπέσκεπται δὲ πολλοῖς περὶ αὐτοῦ τρόποις καὶ ἐν τοῖς ἐξωτερικοῖς λόγοις καὶ ἐν τοῖς κατὰ φιλοσοφίαν. Cf. following note.

[1] This is indicated by the express statement in the passages quoted in the preceding note, especially from *Polit.* vii. 1, *Eth.* i. 13, *Metaph.* xiii. 1, that certain points have been sufficiently explained 'even in the exoteric discourses:' that is, inasmuch as we should less expect such discussions in them. Eudemus puts it more definitely, by putting the ἐξωτερικοὶ λόγοι (see preceding note, *fin.*) in opposition to the λόγοι κατὰ φιλοσοφίαν. Since the latter are scientific inquiries, the former can only be popular discourses; and, since (as we have seen) writings are meant by them, they can only be popular writings. Now it might indeed appear that the criticism of the doctrine of Ideas, to which *Eth. Eud.* i. 8, and *Metaph.* xiii. 1, *loc. cit.* refer, would of all things have been least suited for popular writings; but we have already seen on p. 76, n. 3, 56, n. 2 *med.* that he opposed this doctrine, with the greatest resolution, in the Dialogue on Philosophy.

[2] Ἐξωτερικὸς in Aristotle means (1) that which *exists* outside, the external; and (2) that which *goes* out, refers to the external. The word has the former meaning when for instance a foreign province is called an ἐξωτερικὴ ἀρχὴ (*Polit.* ii. 10, 1272, b, 19), or when hand and foot are styled ἐξωτερικὰ μέρη (*Gen. An.* v. 6, 786, a, 26); to these uses cf. the ἐξωτερικὰ ἀγαθὰ, *Pol.* vii. 1, 1323, a, 25. In the second meaning the expression is used in the combination: ἐξωτερικαὶ πράξεις (*Pol.* vii. 3, 1325, b, 22, 29). If now, in the phrase ἐξωτ. λόγοι, we propose to give it the *first* meaning, we cannot, by exoteric discourses, in those passages where Aristotelian writings of a particular class or the inquiries contained in them are meant, understand such discourses as lie outside the discussion in which they are referred to as 'other discourses' (like the ἐξωτερικωτέρα σκέψις and the ἔξωθεν λόγοι, p. 115, n. 1 and 3); nor yet (as Bernays thinks in *Dial. d. Ar.* 92 sq.) such as do not enter into the essence of a thing, but are external to it (as p. 115, n. 2). The latter meaning would not suit, partly because this would be a strange way of speaking of 'popular treatises,' partly because it would not fit those cases in which Aristotle again takes up in later works, as being suitable and adequate, what he had said in the ἐξωτερικοὶ λόγοι (as in the passages of the *Politics*, *Ethics*,

inferred either from the words ἐξωτερικοὶ λόγοι themselves, or from the surrounding facts, that Aristotle's Dialogues alone were meant. There may have been, and in fact there appear to have been, other works also which were adapted to the understanding of the general public.[1]

As to the later theories, the idea that the Master did not intend his strictly scientific work for publication at all is refuted by the contemporary record of the complaints that were made because he published them: [2] and the idea that he designedly chose for them a style obscure and unintelligible to the lay mind is disproved by the visible characteristics of the texts themselves. The truth is that, except in cases where we ought to consider them as mere sets of notes for his own use, he takes all manner of trouble to aid the reader, by the use of a strictly devised scientific terminology, by clear definitions, by explanations and illustrations, by methodical processes of thought, and by warnings against possible obscurities, ambiguities or misconceptions. If it be true nevertheless that there occur many particular points of

and *Metaphysics* given on p. 115, n. 4). Such writings could only be called exoteric, in this use of the word, in the sense that they were known and in use even outside the Aristotelian school. But it comes to very much the same thing also if we start (as Zeller prefers to do), with the *second* meaning of ἐξωτερικὸς, and understand the ἐξωτ. λόγοι to signify such works as were intended for outsiders or for the general public, the same, in fact, as are included in the terms λόγοι ἐκδεδομένοι or ἐν κοινῷ γιγνόμενοι. That such writings were of a more popular character was implied in the designation, but not directly expressed in the adjective ἐξωτερικὸς as such. When Eudemus puts the λόγοι ἐξωτ. in opposition to those κατὰ φιλοσοφίαν (see preceding note), we might understand the latter to mean 'such as were intended to serve for scientific instruction'; but at the same time there is nothing against the translation 'both in those intended for the general public and in the scientific treatises.'

[1] Cf. p. 60, n. 1.

[2] Cf. p. 22, n. 1, 112, n. 3.

difficulty, the reasons are to be found anywhere rather than in the writer's intention. Besides, it is obvious that any such theory attributes to the philosopher a very childish sort of mystification, wholly destitute of any reasonable motive.

It does seem, however, to be true that it was only a portion of his writings which Aristotle *published*, in the sense of making express provision for their dissemination to a wide circle of general readers. Others which were more closely connected with his oral teaching seem to have been designed primarily for the use of his scholars as classbooks.[1] It was in the case of the former only that he took pains to cultivate that eloquence and artistic completeness and that popular style of exposition for which his 'exoteric' works were famous. The sole aim of the second set of texts was scientific investigation for its own sake, and they were therefore distinguished by a stricter logic and a less artistic dress. It seems that of the former class by far the greater part, if not the whole, consisted of those writings which Aristotle wrote before the opening of the Peripatetic School at Athens, and chiefly while he was still one of the Platonic circle: of all of which nothing remains but a few fragments.[2] On

[1] But without our having to suppose that they were forbidden to communicate them to others.

[2] 'In this sense', says Prof. Zeller, 'I had already expressed myself in the second edition, p. 98, as to the probable state of facts with regard to the distinction between exoteric and esoteric writings. On the other hand, I then believed that, in the Aristotelian passages which mention the ἐξωτερικοὶ λόγοι, I could everywhere translate that phrase as meaning such discussions as do not belong to the sphere of the inquiry actually under investigation. (Thus also SCHWEGLER, *Gesch. d. griech. Phil.* 194.) I have now rejected this opinion, and think that the general meaning of ἐξωτερικὸς, to designate something external, or relating to the external, is more

such a theory there may have been a great difference in form between the 'exoteric' and the 'acroatic' texts,

appropriate. It follows that even in the combination ἐξωτερικοὶ λόγοι this expression will apply not only to such discussions as lie outside a specified subject (as p. 115, n. 1), or are concerned only with what is external to it (p. 115, n. 2), but also to such as are current outside a particular circle (p. 115, n. 3), or such as are intended for outsiders (p. 115, n. 4). According as we begin from this or that passage in Aristotle, and extend the meaning of the expression in that particular passage to all the other cases, we get this or that rendering of the ἐξωτ. λόγοι. This is the explanation of the fact that even now there are the most diverse opinions on the matter. Of these, the farthest removed from the explanation which has prevailed since the time of Andronicus, which understands by this expression a particular class of Aristotelian writings, is the supposition of MADVIG (Exc. vii. on CIC. *De Fin.*), PRANTL (*Arist. Physik*, p. 501, 32), SPENGEL ('Arist. Studien,' *Abh. d. bayr. Akad.* x. 181 sq.), FORCHHAMMER (*Arist. und die exoter. Reden*, cf. particularly pp. 15, 64), and SUSEMIHL (*Philol. Anz.* v. 674 sq.), that only the conversations of non-philosophical circles are designated by the ἐξωτ. λόγοι. Rather nearer to it are RAVAISSON (*Métaph. d'Arist.* i. 209 sq.) and THUROT (*Etudes sur Aristote*, 209 sq.), who understand by them such dialectic discussions (in contradistinction to the strictly scientific), as proceed by arguments πρὸς δόξαν, occurring either in Aristotelian writings, or in the oral disputations of the school. These, in their view, may be called exoteric, either because they always have to deal with something foreign to the matter (cf. the ἔξω and ἔσω λόγος, *Anal.* i. 10, 76, b, 24), or because they always treat the subject externally. GROTE (*Aristotle*, 63 sqq.) agrees with them, except that, besides the Aristotelian Dialogues and some extracts from the acroamatic works, he thinks conversations outside the school are referred to. In like manner (though with the exclusion of conversations outside the school) UEBERWEG (*Gesch. d. Phil.* i. 143, 5th ed.). ONCKEN (*Staatsl. d. Arist.* i. 43 sq.) refers the term to oral discussions, allied to the scientific lectures in which the ἐξωτ. λόγοι are mentioned, but of a different class from them. On the other hand RITTER (*Gesch. d. Phil.* iii. 21 sqq.) holds more closely to the statements of the ancient writers about the two classes of Aristotelian pupils and writings, in assuming (p. 29) that all the strictly scientific works were only written by Aristotle as a help to his lectures and were only published, at a later period, by himself or his pupils, and perhaps at first only for the latter; whereas the remaining writings (which are lost to us), were designed for the use of cultured persons and might, together with any corresponding lec tures, be called exoteric. A like position is held, in the main, by BERNAYS (*Dial. d. Arist.*), who by the exoteric discourses under-

and it may be very true that the matter of the former was less advanced than the systematic doctrine of the Master, as we have it from his riper years; but it is entirely beside the mark to suggest that he sought in either the one case or the other to conceal his opinions or to withdraw them from the reader's eye.

It is not only, however, the distinction noted between these 'published' or 'exoteric' books and the others, which points to the conclusion that the extant, closely reasoned writings of Aristotle were written primarily for his scholars, as classbooks only. In the texts themselves there are many indications which it is hard to reconcile with the idea that they were really *published*, in the full sense of the word, during Aristotle's lifetime.

In the first place there is the remarkable circumstance[1] that a book which is cited in another nevertheless

stands such lectures chiefly. HEITZ (*Verl. Schr. d. Ar.* 122 sqq.), though agreeing with him in substance, prefers to give the expression (with reference to *Phys.* iv. 10 *init.*) the broader meaning, and to make it imply a point of view farther removed from true science. BONITZ (*Ind. Arist.* 104, b, 44 sqq.; *Zeitschriften für östr. Gymn.* 1866, 776 sq.) takes a similar view. STAHR (*Aristotelia*, ii. 239 sqq., cf. especially 275 sq.), and BRANDIS (*Gr.-röm. Phil.* ii. b, 101 sqq.) express themselves less decidedly—the former believing that by the exoteric writings are meant partly those in which something was treated merely in passing, partly and principally those which did not essentially belong to the systematic connection of the philosophical writings, such as the Dialogues, partly a special manner of philosophising; the latter broadly identifying the exoteric writings with the popular ones, but abstaining from further definition of them or of the expression "exoteric discourses." THOMAS (*De Arist. ἐξωτ. λόγοις*) stands quite isolated with his strange whim of looking for Aristotle's exoteric discourses in the greater *Ethics*. Space does not permit me a more searching examination of these various suppositions; the principles on which it would be based are contained in what has been said above. STAHR, *ibid.*, gives all the earlier references which bear upon the question.'

[1] RITTER (iii. 29) and BRANDIS (ii. b, 113) have already

cites that other book itself: or that an earlier treatise speaks of an inquiry as already completed, and yet a later treatise says it is in contemplation only. These cases are not rare. The *Topics* is frequently cited in the *Analytics*,[1] and yet cites the latter four times.[2] All four may belong to a later-written portion of the *Topics*, but at any rate they cannot be later than the *Analytics*, in which these same books are cited as well as the earlier ones.[3] When the *Physics* refers us back to discussions which, as we know them, exist only in the *Metaphysics*, it might be said that the reference is to a section which existed as a separate treatise before the *Metaphysics* was compiled;[4] but it cannot be doubted that the zoological

noted this and explained in a similar way.

[1] Cf. p. 67, n. 1. BONITZ (*Ind. Arist.* 102 sq.) gives the passages on which the following explanation is based, so far as they have not been expressly cited here.

[2] VII. 3, 153, a, 24: *ἐκ τίνων δὲ δεῖ κατασκευάζειν* [sc. *συλλογισμὸν ὅρου*] *διώρισται μὲν ἐν ἑτέροις ἀκριβέστερον* (cf. *Anal. Post.* ii. 13), viii. 11, 162, a, 11: *φανερὸν δ' ἐκ τῶν ἀναλυτικῶν* (*Anal. Pr.* ii. 2), viii. 13, 162, b, 32: *τὸ δ' ἐν ἀρχῇ . . . πῶς αἰτεῖται ὁ ἐρωτῶν, κατ' ἀλήθειαν μὲν ἐν τοῖς ἀναλυτικοῖς* [*Anal. Pr.* ii. 16] *εἴρηται, κατὰ δόξαν δὲ νῦν λεκτέον*, ix. 2 (*Soph. El.*), 165, b, 8: *περὶ μὲν οὖν τῶν ἀποδεικτικῶν* [sc. *συλλογισμῶν*] *ἐν τοῖς ἀναλυτικοῖς εἴρηται.*

[3] *Anal. Pr.* ii. 15, 64, a, 36 (*ἔστι δὲ δι' ἄλλων ἐρωτημάτων συλλογίσασθαι θάτερον ἢ ὡς ἐν τοῖς τοπικοῖς ἐλέχθη λαβεῖν*) refers to *Top.* viii. and *Anal. Pr.* ii. 17, 65, b, 15 (*ὅπερ εἴρηται καὶ ἐν τοῖς τοπικοῖς*) to the passage *Top.* ix. 4, 167, b, 21, with which what follows is also closely connected.

[4] In *Phys.* i. 8, 191, b, 2 Aristotle remarks, after a discussion on the possibility of coming into existence: *εἷς μὲν δὴ τρόπος οὗτος, ἄλλος δ' ὅτι ἐνδέχεται ταὐτὰ λέγειν κατὰ τὴν δύναμιν καὶ τὴν ἐνέργειαν· τοῦτο δ' ἐν ἄλλοις διώρισται δι' ἀκριβείας μᾶλλον.* This reference is most probably to a passage in the *Metaphysics* (for to refer it to one of the lost writings is forbidden by the fact that Aristotle is not accustomed in other places to quote these latter, as he cites the dogmatic writings, with the simple *ἐν ἄλλοις*; cf. p. 108, n. 3). In the *Metaph.*, however, it not only agrees with ix. 6 sqq., but also with v. 7, 1017, a, 35 sqq., *i.e.* the treatise Περὶ τοῦ ποσαχῶς, cf. p. 76, n. 3. The same is true of *Gen. et Corr.* ii. 10, 336, b, 29, as compared with *Metaph.* v. 7.

tract cited in the *De Cœlo*[1] was written later than that work.[2] The *Meteorology* refers to the *De Sensu*:[3] and yet in its own preamble it described itself as the close of the series of investigations as to inorganic nature, *after* which the works on Animals and Plants were to be taken up. The *Natural History* quotes the book on Plants, which is spoken of in texts that are demonstrably later as being still unwritten.[4] The same treatise on Plants is referred to in an early section of the Περὶ ζῴων γενέσεως as already existing, and in a later one as yet to come.[5] The lost book on Food is quoted in the *De Somno*;[6] in the later works on the Parts and Generation of Animals, it is promised as in the future.[7] There is a similar relation of cross reference between these same tracts and one of the lesser physiological

[1] *De Cœlo*, ii. 2, 284, b, 13: if the world had a right and left side, it would also be obliged to have an above and below, a before and behind; διώρισται μὲν οὖν περὶ τούτων ἐν τοῖς περὶ τὰς τῶν ζῴων κινήσεις (*Ingr. An.* 2, 704, b, 18, sqq., *ibid.* c, 4 sq.) διὰ τὸ τῆς φύσεως οἰκεῖα τῆς ἐκείνων εἶναι.

[2] This is proved not only from *Meteorol.* i. 1 *fin.* but also because the History of Animals and Π. ζῴων μορίων are quoted; see *Ind. Arist.* 100, a, 55 sq.

[3] III. 2 *fin.*: ἔστω δὲ περὶ τούτων ἡμῖν τεθεωρημένον ἐν τοῖς περὶ τὰς αἰσθήσεις δεικνυμένοις (*De Sensu*, 3) διὸ τὰ μὲν λέγωμεν, τοῖς δ' ὡς ὑπάρχουσι χρησώμεθα αὐτῶν. Still more clearly must we, in *Meteor.* ii. 3, 359, b, 21, refer the εἴρηται ἐν ἄλλοις to *De Sensu*, 4.

[4] *H. An.* v. 1, 539, a, 20: ὥσπερ εἴρηται ἐν τῇ θεωρίᾳ τῇ περὶ φυτῶν. On the other hand this composition, as has been shown on p. 93, n. 1, is first promised in works which on their part quote in many places the History of Animals, *De Vita et M.*, *Part. An.*, and *Gen. An.*

[5] I. 23, 731, a, 29: ἀλλὰ περὶ μὲν φυτῶν ἐν ἑτέροις ἐπέσκεπται. On the other hand v. 3, 783, b, 23: ἀλλὰ περὶ μὲν τούτων (the falling of the leaves in winter) ἐν ἄλλοις τὸ αἴτιον λεκτέον (cf. i. 1, 716, a, 1: περὶ μὲν οὖν φυτῶν, αὐτὰ καθ' αὑτὰ χωρὶς ἐπισκεπτέον, and p. 93, n. 1).

[6] C. 3, 456, b, 5: εἴρηται δὲ περὶ τούτων ἐν τοῖς περὶ τροφῆς.

[7] Cf. p. 92, and on the chronological relation of the writings Π. ὕπνου, Π. ζῴων μορίων, Π. ζῴων γενέσεως, see BONITZ, *Ind. Arist.* 103, a, 16 sqq., 55 sqq.

texts,[1] making it impossible to say which comes before the other. The tract on the Parts of Animals is cited once in that on the Motion of Animals, which it cites three times itself.[2]

How are we to treat this peculiarity? Are we so to pervert the formulæ of reference in all these cases as to read what ostensibly refers to an earlier writing as if it were only an indication of something intended in a later one? This would be negatived by the number of cases in which the phenomenon recurs—itself a notable fact—and also by the circumstance that in several cases the assumption of the later treatise as a thing already in existence is too intimately interwoven with the tenor of the passage to allow the change.[3] The like reasons stand equally against the theory that these abnormal references crept into the text after Aristotle's death.[4] But there is a far

[1] Π. ζωῆς καὶ θανάτου, together with the connected Π. ἀναπνοῆς, cf. p. 91 sq.

[2] *Ingr. An.* 5, 706, a, 33: many animals have the front and hind parts near one another, οἷον τά τε μαλάκια καὶ τὰ στρομβώδη τῶν ὀστρακοδέρμων. εἴρηται δὲ περὶ τούτων πρότερον ἐν ἑτέροις (*Part. An.* iv. 9, 684, b, 10 sqq., 34, where the same is said of the μαλάκιά τε καὶ στρομβώδη τῶν ὀστρακοδέρμων). On the other hand, *Part. An.* iv. 11, 690, b, 14: ἡ δ' αἰτία τῆς ἀποδίας αὐτῶν (of snakes) εἴρηται ἐν τοῖς περὶ τῆς πορείας τῶν ζῴων (c. 8, 708, a, 9 sqq.) διωρισμένοις. *Ibid.* 692, a, 16: περὶ δὲ τῆς τῶν καμπύλων κάμψεως ἐν τοῖς περὶ πορείας (c. 7, 707, b, 7, sqq.) πρότερον ἐπέσκεπται κοινῇ περὶ πάντων. With reference to the same passage, iv. 13, 696, a, 11: τὸ δ' αἴτιον ἐν τοῖς περὶ πορείας καὶ κινήσεως τῶν ζῴων εἴρηται.

[3] Thus *Top.* vii. 3, 153, a, 24, where two lines would have to be thrown out in order to remove the reference, and *Meteorol.* iii. 2 *fin.* (p. 125, n. 3), where the ὡς ὑπάρχουσι, χρησώμεθα plainly shows that the reference is not to a future exposition. Still more violent than the changes of text here contested is the resource (*Ar. Libr. Ord.* 118 sq.) of giving to εἴρηται, when necessary, the meaning of ῥηθήσεται, and of denying the reference to the future in expressions like εἰς ἐκεῖνον τὸν καιρὸν ἀποκείσθω.

[4] Besides the passages given in the preceding note, this suggestion seems especially objectionable in *De Cælo*, ii. 2 (*vid.*

simpler explanation, if it be true that he did not at once publish those books in which we find references to later texts as already written, but used them for a time only among his scholars and in connection with his oral lectures. In such manuscripts addenda would be introduced—and among them references to works written later would come in from time to time. If the author was never able to give to such a work any final revision for the purpose of publication, it might well happen that in one place a reference would stand in its originally correct form, as to a future work, though in another passage of the same or an earlier text a note might have been incorporated which spoke of the same work as already written. The same theory will explain the fact that the *Politics*—which we have every reason to consider as a book never finished by Aristotle, and published in its unfinished form after his death[1]—is cited in the *Rhetoric*, along with the *Poetics*,[2] which is itself spoken of by the *Politics* in the future tense. [3] The fact is that Aristotle had written a part of the *Politics* before he wrote the *Rhetoric* and *Poetics*. Therefore he could call the *Poetics* a future book in the *Politics*, and yet quote a passage of the *Politics* in the *Rhetoric*. If he

*supra*, p. 125, n. 1) since the εἰ δὲ δεῖ καὶ τῷ οὐρανῷ, &c. (line 18) corresponds with the διώρισται μὲν οὖν (line 13). The whole passage from διώρισται to εὔλογον ὑπάρχειν ἐν αὐτῷ (line 20), could be dispensed with, and it would all have to be taken as a post-Aristotelian interpolation.

[1] Cf. *infra*, ch. xiii.

[2] The *Politics* i. 8, 1366, a, 21 (διηκρίβωται γὰρ ἐν τοῖς πολιτικοῖς περὶ τούτων), the *Poetics* frequently, *vid. supra* p. 102, n. 1.

[3] VIII. 7, 1341, b, 39: on the 'catharsis' νῦν μὲν ἁπλῶς, πάλιν δ' ἐν τοῖς περὶ ποιητικῆς ἐροῦμεν σαφέστερον, which, as Bernays (*Abh. d. hist. phil. Ges. in Breslau*, p. 139) rightly supposes, probably refers to a lost section of our *Poetics*, and not to one of the *Politics* (HEITZ, *Verl. Schr.* 100 sq.).

had published the *Rhetoric*, he could not in it have referred as he did to the unpublished *Politics*.[1]

The closing words of the *Topics*[2] seem to indicate that Aristotle's treatises were meant primarily for his scholars. Addressing his readers, he bespeaks their indulgence or their thanks for the theory he has unfolded to them,[3] referring specially to those who have heard his lectures. This does not imply that our *Topics* are only the lecture notes of the Master, or the note-book of one of his hearers. Such a view is negatived both by the wording of the passage,[4] and by the fact that in later writings he often refers to the *Topics* himself[5] in words which cannot be explained away as relating either to a lost book of his own or to another author. Such an address would be out of place in a work which was tendered to an unlimited circle of readers by formal publication, but it is entirely natural if the *Topics* was then issued only to Aristotle's scholars

[1] It is more difficult to explain the strange fact that *Rhet.* iii. 1, 1404, b, 22 speaks of the actor Theodorus as if he were still living and acting, whilst *Polit.* viii. 17, 1336, b, 27 treats him as one belonging to the past. But here the question arises, whether we possess, in the third book of *Rhetoric*, the work of Aristotle himself, or the work of a later writer, who, in this passage, which seems to be in the genuine style of Aristotle, may have used one of his earlier works. Cf. p. 72, n. 2.

[2] *Soph. El.* 33 *fin.*: Aristotle had no predecessor for his theory of demonstration; εἰ δὲ φαίνεται θεασαμένοις ὑμῖν . . . ἔχειν ἡ μέθοδος ἱκανῶς παρὰ τὰς ἄλλας πραγματείας τὰς ἐκ παραδόσεως ηὐξημένας, λοιπὸν ἂν εἴη πάντων ὑμῶν ἢ τῶν ἠκροαμένων ἔργον τοῖς μὲν παραλελειμμένοις τῆς μεθόδου συγγνώμην τοῖς δ' εὑρημένοις πολλὴν ἔχειν χάριν.

[3] Some MSS. read, instead of ὑμῖν and ὑμῶν, ἡμῖν and ἡμῶν; but Aristotle could not possibly have included himself among those whom he thanks, and to whom he apologises.

[4] Which distinguishes among the readers the 'ἠκροαμένοι' from the rest; only by striking out the ἢ before τῶν ἠκροαμένων could we get a simple address to listeners, but the MSS. all have it.

[5] *Ind. Arist.* 102, a, 40 sqq.

as a memorial of the contents of his lectures or as an auxiliary to them.[1] That this was true of some of his books, must be inferred from other passages also. The synopsis of varying meanings of words, which now forms the fifth book of the *Metaphysics*, could never have been published by Aristotle in its present form as a glossary without beginning or end. It can only have been placed in the hands of his scholars simply as an aid to his teaching. Yet he often refers to it, and that even in texts earlier than the *Metaphysics*.[2] The same argument applies to the often-cited anatomical texts,[3] which must have been limited to a narrow circle because of the drawings which were an essential part of them. If it be true, however, that writings which Aristotle cites were published only to his scholars, it follows that the same must be true of those in which these citations occur; for no one could in a published book refer to an unpublished one, or say that a subject not gone into was fully explained in an inaccessible tract.

The same theory by which we explain the group of peculiarities already noticed, will explain others also. The trick of carelessness in style which is so often remarked, the repetitions which surprise us in an exposition otherwise compact, the insertions which upset a naturally well-ordered movement of thought are all explained most easily if we suppose that the author never put the finishing touches to the writings in question, and that various matters were at the time of the

[1] As Stahr, *ibid.*, has supposed.

[2] Cf. pp. 76, n. 3, 124, n. 4.

[3] About which see p. 89, n. 1.

posthumous publication added to the original text either from parallel copies or from the author's notes.[1] This theory becomes extremely probable when, as in the books *On the Soul*,[2] we find throughout considerable sections clear traces of a double recension, without any reason to say that either recension is not Aristotle's.[3] The same kind of argument would apply also to the *Politics* and *Metaphysics*, but as to these we have independent grounds for the belief that they remained unfinished, and were only published after his death.[4] If this be so, a further inference is forced on us; for we must conclude that if a certain book was a posthumous publication only, all which refer to it in such a way as to show that they follow it in the series cannot have been issued in Aristotle's life. This line of argument, even if we could apply it with high probability to nothing more than the *De Anima*, would take us a long way; for that work is cited in many of the books on natural philosophy.[5]

The scope and the modifications of this theory as to the way in which the Aristotelian books were produced, can only be settled by a detailed examination of the indi-

[1] A supposition which a number of scholars have been led to adopt, with various particular modifications: thus RITTER, iii. 29 (*vid. supra*, p. 121, n. 2 mid.); BRANDIS, ii. b, 113; UEBERWEG, *Gesch. d. Phil.* i. 174, eighth ed., SUSEMIHL, *Arist. Poët.* p. 1 sq., BERNAYS, *Arist. Politik*, 212. It is also probable that Aristotle, instead of *writing*, usually *dictated*: which would account for many of the irregularities of style, such as the lengthy and involved anacolutha.

[2] Cf. p. 89, n. 2. It may be otherwise with the repetitions and disarrangements of the connection in the *Ethics*, especially bks. 5–7. Cf. p. 97, n. 1.

[3] As in BK. vii. of the *Physics*, on which Spengel has written in *Abh. d. Münch. Akad.* iii. 2, 305 sqq. Cf. PRANTL, *Arist. Phys.* 337.

[4] Cf. p. 76, n. 3, and *infra*, Ch. xiii., *init.*

[5] *Vid. supra*, p. 93, n. 2; *Ind. Ar.* 102, b, 60 sqq.

vidual texts. But the peculiarities above referred to, the reference to a class of published or 'exoteric' works, the habit of citing later books in earlier ones, the tricks of repetition and disorder which indicate the absence of the author's final revision—all these extend through almost the whole of the extant *Corpus*. From this and from the fact that, though the *Topics* and the *De Anima* were apparently written only for Aristotle's pupils, yet they are frequently cited by later treatises,[1] it seems very probable that the whole of our *Corpus*, so far as it is genuine, consists of books which were produced in connection with the teaching in the Lyceum, were intended at first for Aristotle's pupils only, and were made generally accessible by formal publication only after the master's death. Of the great majority of them it may also be assumed, not only from their contents, but also from their express internal correlation that Aristotle is in them working up in writing what he had already given his pupils by way of oral lectures,[2] though it is also likely that when they came to be published by third parties explanations were added and whole passages interpolated from Aristotle's papers or his other lectures.[3] A few of the texts may have served him as aids in his teaching, without being themselves matter of lecturing.[4] One of the books of the *Metaphysics*[5]

[1] Cf. p. 129 and 130.

[2] Cf. what has been remarked on p. 128 sq. with regard to the closing words of the *Topics*.

[3] As, from what has been said on pp. 76 and 130, seems to have been the case in the *Metaphysics* and the *De Anima*.

[4] Like the composition Περὶ τοῦ ποσαχῶς (cf. p. 76, n. 3, at p. 77). One is inclined to think the same of the 'Ανατομαί.

[5] The twelfth, cf. same note, at p. 78.

seems to have been a plan for a lecture course, though not intended, in its present shape, for communication to his pupils. This, however, cannot well be true of any great portion of the extant writings. That theory is excluded in the first place by the all-pervading system of cross references, which both in number and in manner go far beyond anything that Aristotle could have wanted for himself.[1] Again it is negatived by the fact that, in spite of all the defects already referred to, these works are from a literary point of view far more carefully worked up than they would have been if they were merely sketches for the lecturer's own use. Then again, the unusual recurrence of formulæ of introduction, transition and conclusion, shows that the author is writing, not for himself, but for others.[2]

[1] Bk. xii. of the *Metaphysics* has in the first half none at all, and in the second, which is worked out much more fully (since the *δέδεικται*, c. 7, 1073, a, 5, relates to c. 6, 1071, b, 20), a single reference (c. 8, 1073, a, 32: *δέδεικται δ' ἐν τοῖς φυσικοῖς περὶ τούτων*). It is otherwise in most of the other works. Still more decisive, however, is the form of the references. No one uses for himself expressions like the *φαμὲν* mentioned in p. 115, n. 4, or circumstantial formulas, like *ἔκ τε τῆς ἱστορίας τῆς περὶ τὰ ζῷα φανερὸν καὶ τῶν ἀνατομῶν καὶ ὕστερον λεχθήσεται ἐν τοῖς περὶ γενέσεως* (*Part. An.* iv. 10, 689, a, 18), and the like (the *Ind. Ar.* 97, b, sqq. furnishes examples), or like those quoted on p. 115.

[2] To this class belongs the conclusion of the *Topics* (see p. 128, n. 2); the *νῦν δὲ λέγωμεν* (*Soph. El.* c. 2, *fin.*; *Metaph.* vii. 12, *init.*, xiii. 10, 1086, b, 16 and *supra*), *ὥσπερ λέγομεν*, *ὥσπερ ἐλέγομεν* (*Eth. N.* vi. 3, 1139, b, 26, *Metaph.* iv. 5, 1010, a, 4, *Rhet.* i. 1, 1055, a, 28 and *supra*), *καθάπερ ἐπήλθομεν* (*Metaph.* x. 2, *init.*, xiii. 2, 1076, b, 39), *καθάπερ διειλόμεθα* (*Metaph.* vii. 1, *init.*), *ἃ διωρίσαμεν*, *ἐν οἷς διωρισάμεθα*, *τὰ διωρισμένα ἡμῖν* (*Metaph.* i. 4, 985, a, 11, vi. 4, *fin.*, i. 7, 1028, a, 4), *δῆλον ἡμῖν* (*Rhet.* i. 2, 1356, b, 9, 1357, a, 29), *τεθεώρηται ἡμῖν ἱκανῶς περὶ αὐτῶν* (*Metaph.* i. 3, 983, a, 33); cf. also those sentences in which what has been discussed before is summed up, and what is going to be treated is announced (e.g. *Metaph.* xiii. 9, 1086, a, 18 sqq., *Rhet.* i. 2, 1356, b, 10 sqq.; *Soph. El.* c. 33, 183, a, 33 sqq.; *Meteorol.* init.). ONCKEN (*Staatsl. d. Ar.*, i. 58) cites, from the *Nicom. Ethics* and

Another unlikely theory[1] is that which suggests that the whole or a great part of our *Corpus* consists of transcripts in which Aristotle's pupils had set down the contents of his lectures. We have seen that they are in all probability closely connected with the lecture courses.[2] But whether they are a mere transcript of these, or a free working-up of the same matter, whether they were designed to repeat as correctly as might be the words of the master, or to leave us a spiritual reproduction of his thoughts, whether in fine they were written by his pupils or by himself, is a very different question. The note-theory may rely on the suggestion that it would explain the carelessness of the methods of

the *Politics* alone, thirty-two passages with such formulas. No one will believe that Aristotle would have had to write down all such expressions in his lecture-book, like a man beginning to teach, who is not sure of a single word.

[1] ONCKEN, *ibid.* 48 sqq. following SCALIGER. O. there remarks (62 sq.) that he thinks he has only made this supposition probable with regard to the *Ethics* and *Politics*, but his reasons would hold equally for the majority of our Aristotelian writings.

[2] Oncken, in proof of this, rightly appeals, besides other passages (p. 59 sq.), to those passages of the *Ethics* in which an audience is spoken of: *Eth.* i. 1, 1095, a, 2, 11: διὸ τῆς πολιτικῆς οὐκ ἔστι οἰκεῖος ἀκροατὴς ὁ νέος . . . περὶ μὲν ἀκροατοῦ . . . πεφροιμιάσθω τοσαῦτα. *Ibid.* c. 2, 1095, b, 4: διὸ δεῖ τοῖς ἔθεσιν ἦχθαι καλῶς τὸν περὶ . . . τῶν πολιτικῶν ἀκουσόμενον. (*Eth.* x. 10, 1079, b, 23, 27; vii. 5, 1147, b, 9, are not relevant here; and *Pol.* vii. 1, 1323, b, 39: ἑτέρας γάρ ἐστιν ἔργον σχολῆς ταῦτα, only means 'this belongs to another inquiry.') Oncken further proves that, in referring on any point to other works, only such expressions are used as are suited to a person who is *speaking*, such as εἴρηται, λεκτέον, ἄλλος λόγος, &c.; but such language was certainly used in referring to *writings* (like the *Problems* and the ἐξωτερικοὶ λόγοι, see above, p. 96, and p. 115, n. 4), and is often so used in our own days. He also refers to the title πολιτικὴ ἀκρόασις (*ap.* DIOG. v. 24); φυσικὴ ἀκρόασις is likewise universally used for the *Physics* (*vid. supr.* p. 81, n. 2); but since we do not know with whom these titles originate, not much can be inferred from them.

statement.[1] But on closer inquiry, this argument comes to nothing. For it is not here a question of any such defects as commonly arise in the redaction of well-ordered lectures badly reported, through omissions and repetitions and the erroneous piecing together of the broken argument. It is more a question of peculiarities of style not restrained by the writer, which are too characteristic and too constant in their character to allow us to make chance and the errors of third persons answerable for them.[2] Such an origin might be thought possible if they appeared in some books and not in others. But as they in fact extend, though in varying degrees, through the whole, they can only be ascribed to Aristotle himself. The very style and form of the

[1] And this is the chief ground on which Oncken bases his opinion. The defects of our texts are most easily explained 'from the natural defects of a peripatetic monologue' (he says, p. 62), 'hastily copied in and badly edited from the note-books of the audience.'

[2] With these must be reckoned the formation of the sentences (searchingly investigated by BONITZ, *Arist. Stud.* ii. 3 sqq.) especially the explanations, often of considerable length, which are parenthetically introduced, and the anacolutha consequent on this; the frequent use or absence of certain particles (proofs of which are to be found in EUCKEN, *De Arist. Dicendi Ratione*, and in Bonitz's notice of this work in the *Ztschr. f. d. östr. Gymn.* 1866, 804 sqq.), and similar points. The same is the true view as to the questions occurring so often in all Aristotelian writings, which are put at one time in simple form, at another (as in *De An.* i. 1, 403, b, 7 sqq., *Gen. et Corr.* ii. 11, 337, b, 5, and in the passages explained by BONITZ, *Arist. Stud.* ii. 16 sq., *ibid.* 6, 333, b, 30) in a disjunctive form, but are not answered. That such unanswered questions could not have occurred in a composition (ONCKEN, *ibid.* 61), one cannot allow — how many, for instance, are found, only to mention one modern writer, in Lessing! Neither can one admit the supposition (*ibid.* 59), that they were answered, in oral discourse, by the audience or the teacher. They seem to be, both in Aristotle and Lessing, a very natural diversion of an acute and lively Dialectic, which would have been more likely to be removed than retained by any reporter.

writings therefore afford a strong indication that not only their contents but their language is Aristotle's own. A like conclusion follows also (as we have seen [1]) from the series of cross references; for in a lecture a man might allude to one or two past courses, but could hardly refer to a whole series of lectures widely distant in date, as to which he could not assume that the details were in the memory of his present audience.[2] It seems moreover that in many cases, as in the Natural Philosophy, the matter of the various treatises goes too closely into detail for the purposes of oral teaching. Such lectures would have taxed the attention and memory of the most zealous hearer, and it is difficult to see how they could have been transcribed so perfectly.[3] Yet these treatises stand on no different footing from the rest.

We learn that Theophrastus and Eudemus in their *Analytics* followed Aristotle, not only in the general plan, but in details,[4] and we can bring proof that these followers adopted word for word several passages of the extant *Metaphysics*.[5] Eudemus adopted the *Ethics* of

[1] See pp. 128, 131.

[2] Note, in relation to this point, how one and the same composition is frequently referred to in the most remote places, and how, on the other hand, the most widely differing texts are cited in the same treatise. Thus the *Physics*, *De Cælo*, *Gen. et Corr.*, *Meteor.*, *De Anima*, *De Sensu*, *Part. An.*, are quoted in many passages of the *Metaphysics* and in the *Ethics*; the books on *Generation and Corruption* in the *Meteorology*, *Metaphysics*, *De Anima*, *De Sensu*, *Part. An.*, *Gen. An.*; the *Metaphysics* quote the *Analytics*, *Physics*, *De Cælo*, *Ethics*, the ἐκλογὴ τῶν ἐναντίων; in the *Rhetoric*, the *Topics*, *Analytics*, *Politics*, *Poetics*, and the Θεοδέκτεια are quoted.

[3] The notion of formal dictation can hardly be suggested, but if it were, it would imply that our Aristotelian writings were the work of Aristotle himself and *not* his pupils' notes.

[4] Cf. p. 67.

[5] Cf. p. 78, n. 1.

Aristotle, and still more the *Physics*,[1] often verbally, into his own corresponding texts. We actually possess letters in which Eudemus consults Theophrastus as to the text of a particular passage and receives his answer.[2] These facts clearly justify Brandis' remark,[3] that the fashion in which Aristotle's followers clung to the master's writings presupposes that they were dealing with his actual words. As to the *Topics* in particular, it has been already proved that it is not a mere transcript by another hand, but that on the contrary it bears to be and must have been the work of Aristotle (see p. 128).

If it be true that the philosophical works of Aristotle had not yet passed at his death beyond the circle of his personal hearers, this circumstance would make it also intelligible that they might for a long time, even after his death, have been withheld from general publicity, or that they might even by an unlucky accident have been lost to the Peripatetic School. And, according to a curious and well-known story, such an accident was said to have occurred, involving, as was supposed, the loss for two centuries of the texts of Aristotle.

[1] See the section dealing with Eudemus, etc., *infra*, Ch. xix., and notes thereon.

[2] These have reference to *Phys.* v. 2, 226, b, 14, and are found in SIMPL. *Phys.* 216 a, *Schol.* 404, b, 10.

[3] *Gr.-röm. Phil.* ii. b, 114.

# CHAPTER III

## HISTORY AND ORDER OF THE WORKS OF ARISTOTLE

STRABO and Plutarch say that the works of Aristotle and Theophrastus passed, at the death of the latter, to his heir, Neleus of Scepsis, and that they were stowed away in a cellar by the heirs of Neleus, discovered only in the early part of the last century B.C. by Apellico of Teos in a decayed condition, brought by him to Athens and thence by Sulla as spoils of war to Rome, where they were afterwards used and republished by Tyrannio and Andronicus.[1] From this story the writers named argue that to the Peripatetics who followed Theophrastus, not only the master's chief works, but also his true philosophical system was unknown, but they do not tell us whether this allegation is grounded on their own opinion, or on definite evidence,

[1] The date of this edition must have fallen somewhere about the middle of the last century B.C. For as Tyrannio was in B.C. 71 taken prisoner in Amisus and released by Muræna (cf. ZELLER, *Ph. d. Gr.*, pt. iii. a, 550, 1), he could hardly have settled in Rome before Lucullus' return to Rome (66 B.C.). We know that he was even at the time of his capture a scholar of renown, that he was instructing in B.C. 57 the sons of Cicero, and had some intercourse with the latter and Atticus (CIC. *Ad Qu. Fr.* ii. 5, *Ad Att.* iv. 4, 8). His work at Rome could not, therefore, have extended very far beyond the middle of the century, even though he perhaps lived on into the last third of it. (He died according to Suid. *s. v.* γηραιὸς, in the third year of an Olympiad the number of which has unfortunately been miswritten.) About Andronicus cf. ZELLER, *Ph. d. Gr.*, pt. iii. a, 549, 3, and above, p. 49, n. 6.

and if so, what the nature of the evidence might be.[1] Later critics found in the tale a welcome explanation of the incompleteness and irregularities of the existing *Corpus*.[2] If in truth the case were exactly as Strabo and Plutarch say, we should not only not wonder at the existing defects, but we should rather have expected a far wider and more hopeless corruption than appears in fact to exist. For if it were true of the most important

[1] Our authorities for the above narrative are, as we have remarked, Strabo (xiii. 1, 54, p. 608) and Plutarch (*Sulla*, 26), for Suid. Σύλλας only copies Plutarch. The latter, however, undoubtedly gets his information from Strabo. The only thing which the latter does not give is the remark that Andronicus obtained copies of the Aristotelian works through Tyrannio, published them, and wrote the τοὺς νῦν φερομένους πίνακας. Plut. may have added this from what he knew from other sources, or also (as Stahr supposes in *Arist.* ii. 23) from Strabo's historical work (made use of immediately afterwards for an incident in Sulla's residence at Athens). We have no right to suppose (HEITZ, *Verl. Schr.* 10) a source for his information about Apellico's discovery of books, independent of Strabo. Hence our only stable witness for this item is Strabo. But we do not know to whom the latter was indebted for his information; the supposition that it was Andronicus is very unsafe. Strabo, after the statements as to the purchase of the Aristotelian books by Apellico, and as to his faulty editing of them, says: συνέβη δὲ τοῖς ἐκ τῶν περιπάτων, τοῖς μὲν πάλαι τοῖς μετὰ Θεόφραστον οὐκ ἔχουσιν ὅλως τὰ βιβλία πλὴν ὀλίγων, καὶ μάλιστα τῶν ἐξωτερικῶν, μηδὲν ἔχειν φιλοσοφεῖν πραγματικῶς ἀλλὰ θέσεις ληκυθίζειν· τοῖς δ' ὕστερον, ἀφ' οὗ τὰ βιβλία ταῦτα προῆλθεν, ἄμεινον μὲν ἐκείνων φιλοσοφεῖν καὶ ἀριστοτελίζειν, ἀναγκάζεσθαι μέντοι τὰ πολλὰ εἰκότα λέγειν διὰ τὸ πλῆθος τῶν ἁμαρτιῶν. But we can only suppose this to have been taken from Andronicus, if we limit the 'younger Peripatetics' (τοῖς δ' ὕστερον, &c.) to those predecessors of Andronicus who were able to use the editions of Apellico and Tyrannio, and it is very questionable whether anyone could attribute to these men, who are quite unknown to us, an improvement of the Peripatetic doctrine, and a closer insight into Aristotle, such as might with reason be ascribed to Andronicus. As little can we assume Tyrannio or Boëthus (to whom Grote ascribes it, *Aristotle*, i. 54) as Strabo's source of information, since the former would have taken a different view of his own edition, and the latter of the younger Peripatetics.

[2] Thus BUHLE, *Allg. Encykl.* Sect. i. vol. v. 278 sq., and lately HEITZ; see next page, n. 2.

works that the only source of our extant text was to be found in these MSS., which rotted for a century and more in the cellar of Scepsis, till Apellico found them worm-eaten, ruined by damp, and tossed into a disordered heap—if it be true that he, as Strabo says, supplied unskilfully the missing portions, and that Tyrannio and Andronicus also had no further manuscripts they could collate—who then could guarantee that in any number of cases there would not have been foreign matter, found among Neleus' MSS., adopted into Aristotle's text, or connected parts of his own works separated, and other portions blunderingly bound together, or lacunæ great and small filled up by the editor's fancy?

Modern criticism has, however, raised doubts about Strabo's story [1] which even its defenders cannot altogether silence.[2] That Theophrastus bequeathed his library to Neleus is beyond doubt.[3] That the MSS. of

[1] After the isolated and disregarded voice of a learned Frenchman, about the beginning of the eighteenth century, had raised doubts as to this narration (see what Stahr gives in *Arist.* ii. 163 sq. from the *Journal des Sçavans* of the year 1717, p. 655 sqq., as to the anonymous composition *Les Aménitez de la Critique*), BRANDIS ('Ueb. die Schicksale d. arist. Bücher.' *Rhein. Mus.* v. Niebuhr and Brandis, i. 236 sqq., 259 sqq.; cf. *Gr.-röm. Phil.* ii. b, 66 sqq.) was the first to deal with it seriously. KOPP (*Rhein. Mus.* iii. 93 sqq.) supplemented his criticism, and finally STAHR has discussed the question with exhaustive particularity (*Aristotelia*, ii. 1–166, cf. 294 sq.). Later scholars have mostly followed them.

[2] HEITZ, *Verl. Schr. d. Ar.* 9 sqq., 20, 29 sqq.; GROTE, *Aristotle*, i. 50 sqq.; GRANT, *Ethics of Ar.* i. 5 sqq., *Aristotle*, 3 sqq. Certain errors in Strabo's and Plutarch's representation are indeed admitted by these scholars, but in the main it is said to be correct. It is impossible here to examine in detail the reasons given for this opinion, but the grounds for its rejection are fully dealt with in the text.

[3] Theophrastus' will, *apud* DIOG. v. 52; cf. ATHEN. i. 3, where it is added that Ptolemy Philadelphus bought the whole

Aristotle and Theophrastus belonging to that library passed to the heirs of Neleus and were by them hidden in a canal or cellar to escape a royal book-collector and were afterwards found by Apellico in a desperate condition, there is no need to doubt.[1] All the *facts* which Strabo relates as to the matter may therefore be correct enough. And it is also beyond question that Andronicus' edition of the Aristotelian text-books was of epoch-making importance both for the study of the system and for the preservation of the text. If, however, it be maintained that these writings were nowhere to be found outside the Scepsis cellar and were unknown therefore to the Peripatetic School after the death of Theophrastus, there are the strongest arguments against any such theory.

In the first place, it is almost incredible that an event so singularly notable as the discovery of the lost masterpieces of Aristotle should never have been even alluded to by any of those who, since that time, have concerned themselves with Aristotle, as critics or as philosophers. Cicero says not a word, though he had abundant occasion, for he lived at Rome at the very time when Tyrannio was working among the literary booty of Sulla, and was, in fact, in active intercourse with Tyrannio himself. Alexander, 'the Exegete,' says nothing; nor does any one of the Greek critics who used the very works of Andronicus, either at first or at second

collection of Neleus and had it brought to Alexandria.

[1] For when Athenæus, or the epitomiser of his introduction, *ibid.*, asserts that the *whole library* of Neleus was taken to Alexandria, this may easily be an inexact expression, just as it is inexact, in the opposite way, when, in v 214, he makes Apellico possess not the *works*, but the *library* of Aristotle.

hand. Andronicus himself seems to have ascribed to Apellico's discovery so little importance that he based neither the inquiry into the genuineness of a tract nor the discussion of a various reading upon any reference to the MSS. of Neleus.[1] Later editors did not in any way feel themselves bound by his text,[2] though if Strabo were right, it could be the only authentic one.

On the other hand, the theory that by the loss of the works of Aristotle, the followers of Theophrastus strayed from the original teachings of their school and lost themselves in mere rhetorical developments, is an obvious contradiction of the facts. It may be true that the Peripatetics of the third century strayed away as time went on from the study of natural philosophy and metaphysics, but this change took place not on the death of Theophrastus, but at the earliest on the death of his successor Strato. So far was he from confining himself to ethics and rhetoric, that he devoted himself, on the contrary, with a one-sided preference to physics, though he by no means neglected logic and metaphysics. He frequently contradicted Aristotle; but that could not be by ignorance of the Aristotelian system, because he attacked it expressly.[3] It does not appear

[1] With regard to the first, cf. the account given on p. 66, n. 1. as to his doubts about the Π. Ἑρμηνείας: with respect to the second point, cf. DEXIPP. *In Arist. Categ.* p. 25, Speng. (*Schol. in Ar.* 42, a, 30): *πρῶτον μὲν οὐκ ἐν ἅπασι τοῖς ἀντιγράφοις τὸ "ὁ δὲ λόγος τῆς οὐσίας" πρόσκειται, ὡς καὶ Βοηθὸς μνημονεύει καὶ Ἀνδρόνικος*—it is not said that he has settled the dispute by means of Sulla's MSS. (or, if he had not access to the latter, at least by means of the copies of Tyrannio, which, according to Plutarch, he used). It seems, therefore, that these MSS. were not the only copies nor even the original ones of the works in question. Cf. BRANDIS, *Rhein. Mus.* i. 241.

[2] Cf. SIMPL. *Phys.* 101, a.

[3] The proofs will be given,

that the scientific activity of the School came at once to an end, even after Strato's death.[1] The theory that the falling away of the later Peripatetics from Aristotle was due to the loss of his writings from Athens is in every way unnatural. It is much more reasonable to correlate it to the parallel movement in the Academy, which nevertheless was at no loss for texts of Plato.

But who can believe that the most important works of the great philosopher were not extant at the date of his successor's death in any other MSS. than those which Neleus inherited? or that not only in Aristotle's lifetime, but also in the nine Olympiads between his death and that of Theophrastus, not one of his many followers had ever been willing and able to possess himself of the most important sources of the Peripatetic teaching? Who can think that Eudemus, the most loyal of the Aristotelian circle, or Strato, the shrewdest of the Peripatetics, would have done without the Master's books—or that Demetrius of Phalerus did not include them in his zeal for collecting learned works—or that Ptolemy Philadelphus bought other books of Aristotle and Theophrastus for his Library of Alexandria, but omitted to obtain copies of their essential texts?

The story also supposes that the possessors of the manuscripts objected to such uses of them: that Aristotle kept his writings closely under lock and key, and that Theophrastus, for no apparent reason, kept up this

in part, in the following pages. They will also be found in the section on Strato, *infra*, Ch. xx., and notes thereon.

[1] See, at end of vol. ii., the section on the Pseudo-Aristotelian texts (*infra*, Ch. xxi.).

secrecy, and laid it as a duty on his heirs. All this is too absurd to need serious refutation.

We are not left, however, wholly to conjecture. The materials are very scanty for the history of a time whose philosophic literature by an unhappy accident we have almost wholly lost; but we can still prove, as to a great part of Aristotle's books, that they were not unknown to the learned men of the two centuries that elapsed between Theophrastus' death and the occupation of Athens by Sulla. Whether Aristotle did or did not himself *publish* his strictly scientific treatises, they were in any case destined to be the text-books of the School, and to be used by its members. Even those numerous passages in which they refer one to the other offer us a palpable proof that, in the view of the writer, they were not only to be read by his scholars, but closely studied and compared, and, by consequence, that copies were to be kept and multiplied. That this was done is clear, not only from the notices which we find of particular books, but from certain general considerations also.

If it is true that the Peripatetics lost the genuine Aristotelianism when the library of Theophrastus disappeared, it must be because the sources of that teaching were nowhere else to be found. But we hear not only of Theophrastus but of Eudemus also, that he imitated Aristotle[1] not only in the titles but also in the contents of his books; and how close was the imitation both in wording and in the line of thought, we can see for ourselves in the *Ethics* and *Physics* of Eudemus.[2]

[1] For references see pp. 65 and 68.

[2] Cf. p. 148, n. 4, and in the section on Eudemus at Ch. xix., *inf.*

To do this, Eudemus must have possessed Aristotle's texts; especially if, as a reliable story tells us,[1] he used them at a time when he was not living at Athens.[2] Again, it is beyond doubt that the Alexandrian Library included a large number of Aristotle's works.[3] The compilers of the Alexandrine Canon, who place Aristotle among the model writers of philosophy, may have had chiefly in view the more careful style of his exoteric writings;[4] but in the foundation of that great collection it is not possible that the scientific works of Aristotle can have been left out of account. If the Catalogue of Diogenes[5] comes from the Alexandrine Library, it is proof positive that they were there: but even if that conjecture (in itself extremely probable) were erroneous, the Catalogue still proves in any case that the compiler of

[1] *Vide supra*, p. 136, n. 3.

[2] HEITZ (*Verl. Schr.* 13) indeed thinks that if the Aristotelian works had been universally known and published, it would be incomprehensible that Eudemus in his *Physics* (and *Ethics*) should have imitated the words of Aristotle so exactly. It seems, however, that if Eudemus had hesitated to do this with regard to published works, a plagiarism on unpublished ones must have seemed much more unlawful to him. It is impossible, however, to regard his conduct in this light at all, and he himself probably never so regarded it. His *Ethics* and *Physics* were never intended to be anything but elaborations of the Aristotelian works universally known in the Peripatetic School, adapted to the needs of his own tuition.

[3] Besides what has been remarked on p. 142, we have the fact that Ptolemy Philadelphus busied himself zealously about Aristotelian books, paid high prices for them, and thus gave occasion to the forgery of such texts (AMMON. *Schol. in Arist.* 28, a, 43; DAVID, *ibid.*, l. 14; SIMPL. *Categ.* 2, ε). And such accounts as those noticed at p. 64, n. 1 and 67, n. 1, about the two books of the *Categories* and the forty of the *Analytics* which Adrastus found in old libraries, must refer especially to the Alexandrian Library. But it is not to be supposed that the latter obtained only substituted works, and did not possess the genuine ones, by reference to which the forgeries were proved.

[4] See STAHR, *ibid.* 65 sq. on this point.

[5] For which see p. 48 sqq.

it, who lived later than Theophrastus and earlier than Andronicus, had before him a great part of our extant *Corpus Aristotelicum.*[1] Its probable author, Hermippus, was acquainted with the works of Theophrastus (which according to Strabo and Plutarch were buried in Scepsis along with those of Aristotle), as is clear from his catalogue of them, preserved, apparently, by Diogenes.[2] That he at all events knew nothing of the disappearance of the Aristotelian writings, may probably be inferred from the silence of Diogenes on that subject.[3] Another strong evidence of the use of the Aristotelian books in the third century B.C. is to be found in the Stoic teaching, which in its most systematic exposition by Chrysippus follows both in logic and in physics more closely on the Aristotelian than could be possible if the Aristotelian text-books were unknown. There is, indeed, some express evidence that Chrysippus had in fact these texts in view.[4]

[1] Cf. p. 50, n. 1.

[2] Cf. the scholion at the end of the *Metaphysics* of Theophrastus: *τοῦτο τὸ βιβλίον Ἀνδρόνικος μὲν καὶ Ἕρμιππος ἀγνοοῦσιν· οὐδὲ γὰρ μνείαν αὐτοῦ ὅλως πεποίηται ἐν τῇ ἀναγραφῇ τῶν Θεοφράστου βιβλίων.* From the same list evidently is taken the scholion at the beginning of the seventh book of the *History of Plants* (*apud* USENER, *Anal. Theophr.* 23): *Θεοφράστου περὶ φυτῶν ἱστορίας τὸ η'. Ἕρμιππος δὲ περὶ φρυγανικῶν καὶ ποιωδῶν, Ἀνδρόνικος δὲ περὶ φυτῶν ἱστορίας.* DIOG. (ii. 55) names a book by Hermippus on Theophrastus, of which it probably formed a part. That the lists in Diog. v. 46 sqq., at least in part and indirectly, originated with Hermippus, is the more probable since that writer is mentioned immediately before in v. 45.

[3] For, on the one hand, it is not to be supposed that Hermippus in his copious work on Aristotle (mentioned on p. 51, n. 2) would not have mentioned this circumstance, if he had been aware of it; and, on the other hand, it is very improbable that the author to whom Diogenes is indebted for his many quotations from Hermippus would have passed over this information. Diogenes, to whose literary tastes it must have recommended itself, would have seized upon it, if he found it.

[4] For even if we were not

If the works of Aristotle were first unearthed by Apellico and first fully known through Tyrannio and Andronicus, how could it be said of Critolaus that he imitated the old masters of his school—Aristotle, that is, and Theophrastus?[1] or how of Herillus the Stoic that he based himself upon them,[2] or of Panætius that he was always quoting them?[3] How could we have mention of the constant tendency of Posidonius towards Aristotle?[4] How could Cicero's teacher, Antiochus, have explained the Aristotelian teaching as one with the Academic, and attempted their complete and thorough-going amalgamation?[5] or where could opponents such as Stilpo and Hermarchus have found the material for their attacks on Aristotle?[6] So again, since Andronicus gives us the alleged letter in which Alexander complains to Aristotle about the publication of his doctrine,[7] it follows that long before that date writings of Aristotle, including some of those which were afterwards reckoned 'exoteric,' must have in fact been public property.

Scanty as are the sources open to us, we can ourselves demonstrate the public use before Andronicus, not only of many of the lost works, which, being

inclined to attach much importance to the polemic against one of the discourses mentioned on p. 56, n. 1, yet the expression in PLUT. *Sto. Rep.* 24, p. 1045, supposes acquaintance with Aristotle's dialectical writings.

[1] CIC. *Fin.* v. 5, 14.

[2] *Ibid.* v. 25, 73.

[3] *Ibid.* iv. 28, 79; cf. ZELL., *Ph. d. Gr.* pt. iii. a, 503, 3, 2nd ed.

[4] *Ibid.* iii. a, 514, 2.

[5] Fuller particulars, *ibid.* 535 sqq.

[6] Stilpo wrote, according to DIOG. ii. 120, an Ἀριστοτέλης, Hermarchus (*ibid.* x. 25) πρὸς Ἀριστοτέλην. From the expression of Colotes *apud* PLUT. *Adv. Col.* 14, 1, p. 1115, we can, however, conclude nothing.

[7] See pp. 22, n. 1, and 112, n. 3.

exoteric or hypomnematic,[1] are not here in point, but also of the majority of the scientific treatises themselves.

In the case of the *Analytics* we show this by the Catalogue of Diogenes and by the notices as to the use made of them by Theophrastus and Eudemus.[2] For the Categories and the Περὶ ἑρμηνείας, we have the Catalogue.[3] As to the former, Andronicus found in his MS. the spurious 'Post-prædicamenta' added to them, and was acquainted with several recensions, having varying titles and different readings.[4] It follows, therefore, that the *Categories* must have been long before his day in the hands of transcribers.[5] The *Topics* are in the Catalogue of Diogenes,[6] and Theophrastus[7] and

[1] The letters, *vide supra* p. 54, n. 2.; the four books, Π. δικαιοσύνης (p. 56, n. 1), taken into consideration by Chrysippus, Teles, Demetrius (Π. ἑρμην.), probably also by Carneades; the *Protrepticus*, which is known even to Crates, Zeno, and Teles (p. 60, n. 1), the *Eudemus* (p. 56, n. 2), which at any rate Cicero used; the discourses on Philosophy (p. 55, n. 6) and on Wealth (p. 58, n. 1 end), which, before him, Philodemus, and also Metrodorus, pupil of Epicurus, made use of; the ἐρωτικὸς, which, according to ATHEN. xv. 674, b, Aristo of Ceos knew; the dialogue Π. ποιητῶν (p. 58, n. 1), which Eratosthenes and Apollodorus seem to have used; the Ὀλυμπιονῖκαι, which Eratosthenes (*apud* DIOG. viii. 51), quotes; the *Didascalics*, which Didymus quotes in the Scholiasts to Aristoph. *Av.* 1379 (cf. HEITZ, *Verl. Schr.* 56); the Παροιμίαι, on account of which Aristotle (according to ATHEN. ii. 60, d) was attacked by Cephisodorus; in short (as has been shown at p. 48 sqq.), all the compositions given in the Catalogue of Diogenes, not to mention the spurious but much-used composition Π. εὐγενείας (p. 59, n. 2). The writings on ancient philosophers, among which is included our extant tract on Melissus, &c., are found *apud* DIOG. No. 92–101 (see p. 62, n. 2, *supra*).

[2] See p. 67, n. 1.

[3] See pp. 64, n. 1, 66, n. 1.

[4] See pp. 64 and 66; p. 141, n. 1.

[5] The same would follow from the statement (SIMPL. *Categ.*, *Schol.* 79, a, 1), that Andronicus followed pretty closely the *Categories* of Archytas, since the latter at any rate are imitations of the Aristotelian; Simplicius, however, bases what is here said merely on his false supposition of their genuineness.

[6] Cf. p. 68, n. 1, and 71, n. 2.

[7] Of Theophrastus this is

his follower Strabo[1] had used them. The *Rhetoric* is imitated and referred to in writings which in all likelihood are themselves earlier than Andronicus;[2] and the same is true of the Theodectine *Rhetoric*.[3] The *Physics* were worked over by Theophrastus and Eudemus, and the latter followed the text so closely that he is actually cited in support of the correctness of a various reading.[4] One of the scholars of Eude-

clear from Alexander *In Top.* p. 5, m. (cf. 68, 72, 31), *In Metaph.* 342, 30, 373, 2 (705, b, 30, 719, b, 27). See SIMPL. *Categ. Schol. in Ar.* 89, a, 15.

[1] Cf. ALEX. *Top., infra* (*Schol.* 281, b, 2). Among Strabo's writings is found *apud* DIOG. v. 59, a Τόπων προοίμια.

[2] The former in the *Rhetoric ad Alex.* (*vide supra*, p. 74, n. 3), which Diogenes (No. 79) knows (cf. p. 72, n. 2) as well as our *Rhetoric* (about which see p. 72, n. 2, *ad fin.*); the latter *apud* DEMETRIUS, *De Elocutione*; quotations from our *Rhetoric* are found here, c. 38, 41 (*Rhet.* iii. 8, 1409, a, 1); c. 11, 34 (*Rhet.* iii. 9, 1409, a, 35, b, 16); c. 81 (*Rhet.* iii. 11, *init.*); to it *ibid.* c 34 refers, which is earlier than the author Archedemus, who was probably the Stoic of that name, *circa* 140 B.C.

[3] Which (as shown at p. 72, n. 2) is likewise given in Diogenes, and is named by the *Rhetoric ad Alex.*

[4] We get these facts, apart from other proof, from the exceedingly numerous references to the *Physics* in Simplicius; for instance, about Theophrastus, cf. SIMPL. *Phys.* 141, a and b, and 187, a, 201, b, and the same author *In Categ. Schol.* 92, b, 20 sq., with THEMIST. *Phys.* 54, b, 55, a, b (*Schol.* 409, b, 8, 411, a, 6, b, 28), and BRANDIS, *Rhein. Mus.* i. 282 thereon; about Eudemus, SIMPL. *Phys.* 18, b (*Arist. Phys.* i. 2, 185, b, 11); also 29, a: ὁ Εὔδημος τῷ Ἀριστοτέλει πάντα κατακολουθῶν; 120, b, where it is remarked on *Phys.* iii. 8, 208, b, 18: κάλλιον γὰρ, οἶμαι, τὸ "ἔξω τοῦ ἄστεως" οὕτως ἀκούειν, ὡς ὁ Εὔδημος ἐνόησε τὰ τοῦ καθηγεμόνος, &c.; so 121, b: ἔν τισι δὲ [sc. ἀντιγράφοις] ἀντὶ τοῦ "κοινὴ" "πρώτη." καὶ οὕτω γράφει καὶ ὁ Εὔδημος; 128, b: Εὔδημος δὲ τούτοις παρακολουθῶν, &c.; 178, b: Eudemus writes, in *Phys.* iv. 13, 222, b, 18, not Πάρων but παρών; 201, b: Εὔδ. ἐν τοῖς ἑαυτοῦ φυσικοῖς παραφράζων τὰ τοῦ Ἀριστοτέλους; 216, a: Eudemus immediately connects with what is found in Aristotle at the end of the fifth book, the beginning of the sixth; 223, a: in Aristotle an ἐπὶ τάδε repeated in a different context (*Phys.* vi. 3, 234, a, 1) gives an ambiguity in expression, and so Eudemus puts "ἐπέκεινα" instead of the second ἐπὶ τάδε; 242, a (beginning of the seventh book): Εὔδ. μέχρι τοῦδε ὅλης σχεδὸν πραγματείας κεφαλαίοις ἀκολουθήσας,

mus[1] cited from the *Physics* of Aristotle the three books 'on Movement.' It can also be proved that the same work was known to Strabo,[2] and Posidonius the Stoic showed no less acquaintance with it.[3] The *De Cœlo* cannot be shown with certainty to have been known to any writer older than Andronicus except Theophrastus.[4] It is, however, very unlikely that this work disappeared after his time when its continuation—the Περὶ γενέσεως καὶ φθορᾶς—appears in the Catalogue of Diogenes,[5] and when the *Meteorology*, which is closely connected with both the one and the other, is known to have been used by many writers of that period.[6] Posidonius, for example, appropriated from it the theory of the elements,[7] and Strabo disputed its account of the heaviness and lightness of bodies.[8] The (spurious) *Mechanics*, and the *Astronomy*, are named in the list in Diogenes.[9] The *Natural History* was adapted not only by Theophrastus,[10] but also by the Alexandrine writer Aristophanes of Byzantium.[11] That it was not

τοῦτο παρελθὼν ὡς περιττὸν ἐπὶ τὰ ἐν τῷ τελευταίῳ βιβλίῳ κεφάλαια μετῆλθε; 279, a: καὶ ὅ γε Εὔδ. παραφράζων σχεδὸν καὶ αὐτὸς τὰ Ἀριστοτέλους τίθησι καὶ ταῦτα τὰ τμήματα συντόμως; 294, b: Aristotle shows that the first motor must be immovable—to which Eudemus adds: τὸ πρώτως κινοῦν καθ' ἑκάστην κίνησιν. For further details see ch. xix. *infra*, and p. 136, n 2.

[1] Damasus: *vide supra*, p. 82.

[2] Cf. SIMPL. *Phys.* 153, a (155, b), 154, b, 168, a, 187, a, sqq., 189, b (cf. *Phys.* iv. 10), 214, a.

[3] In the fragment *apud* SIMPL. *Phys.* 64, b; of which Simplicius remarks that it is based on Aristotle (*Phys.* ii. 2).

[4] *Vide supra*, p. 83, n. 1.

[5] That is, if No. 39, Π. στοιχείων α' β' γ', refers to it; about which see p. 50, n. 1.

[6] *Vide supra*, p. 83, n. 1.

[7] SIMPL. *De Cœlo*, *Schol. in Ar.* 517, a, 31.

[8] SIMPL. *ibid.* 486, a, 5.

[9] The former No. 123, the latter 113: *vide supra*, p. 86, n. 1.

[10] DIOG. v. 49 names as his Ἐπιτομῶν Ἀριστοτέλους Π. Ζῴων ϛ'.

[11] According to HIEROCL. *Hippiatr. Præf.* p. 4, this grammarian had written an Ἐπιτομή of it, which ARTEMIDOR. *Oneirocrit.* ii. 14 calls ὑπομνήματα εἰς

unknown during the Alexandrine period is also shown by the Catalogue of Diogenes (No. 102), and by the existence of a popular compilation from it which was much in use.[1] The *De Anima* was used, after Theophrastus,[2] by the author of the book on the 'Movement of Living Creatures,' who used also the spurious treatise Περὶ πνεύματος.[3] As to the *Problems*,[4] it is more than improbable that the working up of that book for the Peripatetic School began later than the time of Andronicus. The *Metaphysics* was used, as we have seen,[5] not only by Theophrastus and Eudemus, but after them by Strabo and other Peripatetics. It was probably published by Eudemus; though some sections of it do seem to have been first introduced by Andronicus into the then extant Aristotelian treatise on the First Philosophy. Of the *Ethics*, it is obvious that it could not have existed only in Theophrastus's MS. so as to be lost with it, for if so it could not have been worked over either by Eudemus or at a later date by the author of *Magna Moralia*. The *Politics*, if we are to judge by the list of Diogenes, was to be found in the Library of Alexandria,[6] along with the first book of our *Economics*,

Ἀριστοτέλην (see Schneider in his edition i. xix). Demetrius also, *De Elocut.* 97, 157 (cf. *H. An.* ii. 1, 497, b, 28; ix. 2. 32, 610, a, 27, 619, a, 16), or perhaps the earlier writer used by him, knows this epitome.

[1] About which see p. 87, n. 1, *ad fin.* From this compilation also the many quotations from the Aristotelian *History of Animals* in Antigonus' *Mirabilia* (c. 16, 22, 27–113, 115) are perhaps taken. For the present purpose it is of no importance whether they are mediate or immediate witnesses for the use of Aristotle's work.

[2] Upon which see THEMISTOCLES in *De An.* 89, b, 91, a; PHILOP. *De An.* C. 4. Cf. p. 89, n. 1, *supra*.

[3] Cf. p. 89, n. 2 *ad fin.*

[4] As to which cf. p. 96.

[5] See p. 79, n. 1.

[6] *Vide supra*, p. 100, n. 1 p. 100, n. 3.

which is also cited by Philodemus.[1] It is obvious that the author of that book[2] had the *Politics* before him; that Dicæarchus knew it also is indicated by the notices of his *Tripoliticus*.[3] The use of it in the *Magna Moralia* is not so well proven,[4] and we cannot tell to what source Cicero owed the parts of it which he used for his own political works:[5] but it is not doubtful that it must have been accessible to learned persons after the death of Theophrastus. The same is true of the Πολιτεῖαι, for the use of which in the Alexandrine period we have abundant proofs.[6] That the *Poetics*

[1] *De Vit.* ix. (*Vol. Herc.* ii.) col. 7, 38, 47, col. 27, 15, where it is ascribed to Theophrastus.

[2] Whom we have rather to seek in Eudemus or one of his Peripatetic contemporaries than in Aristotle: see ch. xxi. *infra.*

[3] On which see *infra*, ch. xix. *ad fin.*

[4] Although happiness is here, i. 4, 1184, b, 33 sqq., defined as ἐνέργεια καὶ χρῆσις τῆς ἀρετῆς, this has certainly a greater resemblance to *Polit.* vii. 13, 1332, a, 7 (a passage to which Nickes, *De Arist. Polit. Libr.* 87 sq. calls attention) than to *Eth. N.* i. 6, x. 6, 7, *Eud.* ii. 1, since happiness is here certainly called ἐνέργεια κατ' ἀρετὴν (or τῆς ἀρετῆς), but the conjunction of the ἐνέργεια and χρῆσις is wanting. Then the χρῆσις is also spoken of in *Eud.* 1219, a, 12 sqq. 23, *Nic.* i. 9. 1098, b, 31, and thus it is quite possible that only these passages were in the mind of the author of the *Great Ethics.*

[5] Zeller had already proved in his 2nd ed., that in Cicero's political writings many things are taken from the Aristotelian *Politics*, citing Cic. *Leg.* iii. 6., *Rep.* i. 25 (cf. *Polit.* iii. 9, 1280, 6, 29, c, 6, 1278, b, 8, 19, i. 2, 1253, a, 2); *Rep.* i. 26 (*Pol.* iii. 1, 1274, b, 36, c. 6, 1278, b, 8, c. 7, 1279, a, 25 sqq.); *Rep.* i. 27 (*Pol.* iii. 9, 1280, a, 11, c. 10, 11, 1281, a, 28 sqq., b, 28, c. 16, 1287, a, 8 sqq.); *Rep.* i. 29 (*Pol.* iv. 8, 11). Susemihl (*Arist. Pol.* xliv. 81) also agrees with this. But since Cicero does not name Aristotle in the *Republic*, and *Leg.* iii. 6 only refers to him in very indefinite expressions, he seems not to have drawn immediately on Aristotle, and the question arises: where did he get this Aristotelian doctrine from? Susemihl, p. xlv, thinks, from Tyrannio, but we might also presume Dicæarchus, whom Cicero was fond of using.

[6] The oldest witness for this is Timæus, *apud* Polyb. xii. 5–11, and the latter author himself. There is also, besides Diog. (*Hermippus*) No. 145, the Scholiast of Aristophanes, who (according to a good Alexandrine authority)

was also known to the Alexandrine grammarians is placed beyond doubt by recent research.[1]

We may sum up the case by saying that of the genuine portions of the extant *Corpus*, there are only the works on the *Parts*, *Genesis*, and *Movement of Animals*, and the minor anthropological tracts, as to which we cannot show either express proof or high probability for the assertion that they were in use after the disappearance of Theophrastus's library from Athens. Even as to these we have no reason to doubt it—only we cannot positively prove it; and that, when we remember the fragmentary character of our knowledge of the philosophic literature of the period in question, is nothing strange. The belief of Strabo and Plutarch that the scientific writings of Aristotle were after the death of Theophrastus all but wholly withdrawn from access is therefore decisively negatived by the facts. A few of these writings may possibly have suffered the fate which they ascribe to the whole. One book or another may have been lost to the School at Athens when they lost the library of Theophrastus, and may have been again published by Andronicus from the damaged MSS. of Sulla's collection. But that this happened to any or all of the important books is for all reasons antecedently improbable. There must have

quoted the Πολιτεῖαι very often; see *Arist. Fr.* ed. Rose, Nos. 352, 355–358, 370, 373, 407, 420 sq., 426 sq., 470, 485, 498 sq., 525, 533.

[1] Their presence in the Alexandrian library is clear from the Catalogue of Diog. (No. 83), and their having been used by Aristophanes of Byzantium and Didymus from the proofs which Susemihl has collected at p. 20 sq., of his edition (following Trendelenburg, *Grammat. Græc. de Arte Trag. Judic. Rel.*) from the Introductions and Scholia to Sophocles and Euripides.

been copies of the important text-books made during the long life of Theophrastus. He who cared so well for his scholars in every other way, by providing for them gardens and houses and a museum and the means of maintaining it, could never have deprived them of his most precious and most indispensable possession—his own and his master's texts—if a sufficient substitute for them were not at hand. Any theory, therefore, as to an individual book of our collection, that its text rests solely on a MS. from Apellico's library, ought to rest entirely on the internal evidence of the book itself; for Strabo's and Plutarch's suggestion of a general disappearance of the texts could give it no support.

It is not, however, to be denied that many of the books show signs leading to the conclusion that in their present form other hauds than the author's have been at work. We find corruptions of the text, lacunæ in the logical movement, displacement of whole sections, additions that could be made only by later hands, other additions which are Aristotelian but were originally designed for some other context, repetitions which we should not expect in so condensed a style, and which yet can hardly be late interpolations.[1] Strabo's story, however, does not serve for the explanation of these phenomena, for the reason, among others, that such peculiarities are to be found equally in those texts

[1] Cf. with regard to this, not to mention other points, what has been said before as to the *Categories* (p. 64, n. 1), Π. ἑρμηνείας (p. 66, n. 1), the *Rhetoric* (p. 72, n. 2), the *Metaphysics* (p. 76, n. 3), the seventh book of the *Physics* (p. 81, n. 2 *ad fin.*), the fourth book of the *Meteorology* (p. 83, n. 2), the tenth book of the *History of Animals* (p. 87, n. 1), Π. ψυχῆς (p. 89, n. 2), bk. v. *De Gen. An.* (p. 92, n. 2), the *Ethics* (p. 98, n. 1), and the *Poetics* (p. 102, n. 2); and the remarks in ch. xiii. *infra* upon the state of the *Politics*.

which we can prove to have been current before Apellico. We must explain them really as arising in part from the circumstances under which these treatises were written and issued,[1] in part from the way they were used for teaching purposes,[2] in part from the carelessness of transcribers and the many accidents to which each transcript was exposed.

If we pass to the discussion of the time and sequence in which the writings of Aristotle were produced, we must remember that this is of far less importance than in the case of the writings of Plato. It is clear that Aristotle commenced his career as a writer during his first residence at Athens,[3] and it is probable that he continued his literary activity in Atarneus, Mitylene and Macedonia. The extant writings, however, seem all to belong to the second Athenian period, although much preparation may probably have been made for them before. The proof of this lies partly in certain traces of the dates of their production, which control not only those books in which they occur, but also all that are later:[4] and partly in the common references

[1] Cf. p. 108 sqq.

[2] How easily, by this means, explanations and repetitions may find their way into the text, and greater or smaller sections may come to be repeated, is perfectly plain, and is proved on a large scale by the parallel case of the Eudemian *Physics* and *Ethics*.

[3] See p. 56 sqq. He left Athens in B.C. 345–4 and returned in 335–4.

[4] Thus *Meteor.* i. 7, 345, a, 1, mentions a comet which was visible when Nicomachus (Ol. 109, 4, B.C. 341) was Archon in Athens, its course and position being accurately described as from subsequent personal inquiry. The *Politics* refer to the Holy War as an event in the past (v. 4, 1304, a, 10), and to the expedition of Phalæcus to Crete, which took place at its conclusion about Ol. 108, 3 (DIODORUS, xvi. 62), with a νεωστὶ (ii. 10, *fin.*), but the same book refers to the assassination of Philip (B.C. 336) in v. 10, 1311, b, 1, without the least indication of its having been a very recent event. The *Rhetoric* in ii. 23,

which even the earliest of them contain to Athens and to the place itself where Aristotle taught.[1] If, then, the view already indicated[2] as to the destination of these texts for his scholars, their connection with his teaching, and the character of their cross references be right, it

1397, b, 31, 1399, b, 12, refers without doubt to past events of the years B.C. 338–336; in iii. 17, 1418, b, 27 it mentions Isocrates' Philippus (B.C. 345); of the *Rhetoric* also Brandis shows (*Philologus*, iv. 10 sqq.) that the many Attic orators quoted in it and in the *Poetics* who were younger than Demosthenes, could by no means belong to a time prior to Aristotle's first departure from Athens, and the same is true of the numerous works of Theodectes which are used both here and in the *Poetics*. In *Metaph*. i. 9, 991, a, 1, xii. 8, 1073, b, 17, 32, Eudoxus and the still younger Callippus, and in *Eth. N.* vii. 14, 1153, b, 5, x. 2, *init.*, Speusippus and Eudoxus are spoken of as if they were no longer living. Rose (*Arist. Libr. Ord.* 212 sqq.) has shown with regard to the *History of Animals*, from viii. 9, ii. 5. *init.*, and other passages, that it was only written (or at least completed), some time after the battle of Arbela, in which the Macedonians saw elephants for the first time, and probably not before the Indian expedition. The fact that even much earlier events are introduced with a *νῦν*—as in *Meteor*. iii. 1, 371, a, 30, the burning of the temple of Ephesus (Ol. 106, 1, B.C. 356), and in *Polit*. v. 10, 1312, b, 19, Dion's expedition (Ol. 105, 4 sq.)—proves nothing, by reason of the indefiniteness of that particle. Just as little does it follow from *Anal. Pri.* ii. 24, that Thebes was not yet destroyed at that time; we might rather gather the contrary, with regard to this work, from *Polit*. iii. 5, 1278, a, 25.

[1] Cf. BRANDIS, *Gr.-röm. Phil.* ii. b, 116. We may give here a few further instances, besides those already noted. *Categ*. 4, 2, a, 1, c, 9 *fin.*: *ποῦ, οἷον ἐν Λυκείῳ*. *Anal. Pri.* ii. 24: Athens and Thebes, as examples of neighbours. Likewise in *Phys*. iii. 3, 202, b, 13; *ibid*. iv. 11, 219, b, 20: *τὸ ἐν Λυκείῳ εἶναι*. *Metaph*. v. 5, 30, 1015, a, 25, 1025, a, 25: *τὸ πλεῦσαι εἰς Αἴγιναν*, as an example of a commercial journey. *Ibid*. v. 24, *fin.*: the Athenian festivals Dionysia and Thargelia (Aristotle also uses the Attic months e.g. *Hist. An.* v. 11, &c.; but it is not fair to attach any importance to this). *Rhet*. ii. 7, 1385, a, 28: *ὁ ἐν Λυκείῳ τὸν φορμὸν δούς*. *Ibid*. iii. 2, 1404, b, 22, *Polit*. vii. 17, 1336, b, 27: the actor Theodorus. Very frequent mention is also made of Athens and the Athenians (*Ind. Ar.* 12, b, 34 sqq.). Again the observation on the corona borealis (*Meteor*. ii. 5. 362, b, 9) suits the latitude of Athens, as Ideler (i. 567), on this passage, shows.

[2] P. 108 sqq.: especially p. 123 sq. and p. 128 sq.

follows that all of them *must* have been composed during his final sojourn in Athens. Equally decisive, on this head, is the observation that throughout the whole of so comprehensive a collection, there is hardly to be found a single notable alteration of teaching or terminology. All is ripe and ready. All is in exact correspondence. All the important writings are woven closely together, not only by express cross reference, but also by their whole character. There are no scattered products of the different periods of a life. We can only look upon them as the ordered execution of a work planned when the author, having come to a full understanding with himself, had gathered together the philosophic fruit of a lifetime. Even the earlier works which he proposed to connect with his later writing, he revised on a comprehensive plan. Therefore, for our use of these texts, it is no great matter whether a particular book was written sooner or later than any other. The problem, however, must be dealt with nevertheless.

A certain difficulty is caused by the use of cross references already noticed.[1] As such cases are, after all, only exceptions in the general run of the citations, the value of these as an indication of sequence is not so slight as has been supposed. There are, in fact, but few instances in which our judgment as to the order of the writings is placed in doubt by the occurrence of references both ways.

Of the extant books, so far as they are open to this classification,[2] the logical treatises, excepting the tract on

[1] Cf. p. 124 sqq.

[2] This, however, is always the case except with writings the genuineness of which can be opposed on other grounds. Not only are none of these quoted in the genuine works, and only a single one in a spurious compo-

Propositions,[1] may be considered to come first. It is in itself natural and accords with Aristotle's methodical plan of exposition, that he should preface the material development of his system by the formal inquiries which were designed to establish the rules and conditions of all scientific thinking. But it is also made evident by his own citations that the Logic did precede the Natural Philosophy, the *Metaphysics*, the *Ethics* and *Rhetoric*.[2] Of the logical tracts themselves, the *Categories* seems to be the first. The *Topics*, including the book on Fallacies, came next, and then the two *Analytics*: the treatise

sition, but only very few of them refer to other writings. On the other hand, there is not one among the works which we consider as genuine, which does not quote the others, or is not quoted by them, or, at least, implied, whilst in most of them examples of all three connections occur. To explain more fully: I. Of the decidedly *spurious* works: (a) the following are neither quoted nor do they quote others: Π. κόσμου, Π. χρωμάτων, Π. ἀκουστῶν, Φυσιογνωμονικά, Π. φυτῶν (see p. 93), Π. θαυμασίων ἀκουσμάτων, Μηχανικά, Π. ἀτόμων γραμμῶν, Ἀνέμων θέσεις, Π. Ξενοφάνους &c., Ἠθικὰ μεγάλα, Π. ἀρετῶν καὶ κακιῶν, Οἰκονομικά, Ῥητορικὴ πρὸς Ἀλέξανδρον. (b) Π. πνεύματος quotes no other, but is quoted in the spurious treatise Π. ζῴων κινήσεως. (c) On the contrary, the latter itself is never quoted. But it names some other writings; as does also the *Eudemian Ethics*, supposing that its quotations refer to Aristotelian works. II. Among the remaining writings, the *Categories* is the only work which quotes no other, and neither is it directly quoted (but cf. p.64). The Π. ἑρμηνείας. Π. τ. καθ' ὕπνον μαντικῆς and the *Rhetoric* quote others, but are not quoted; Π. ζῴων γενέσεως has many quotations, but is only once cited, as a book planned for the future; of the *Metaphysics* only bk. v. is quoted or used (cf. pp. 76, n.3, and 79, n.1) in genuine works, bks. i., xii., and xiii. in spurious ones: and the *Metaph.* itself quotes the *Analytics*, the *Physics*, *De Cœlo*, and the *Ethics*.

[1] On which see p. 66, n. 1.

[2] Besides the arguments given on p. 67, n. 1, p. 68, n. 1, we have the decisive passage in *Anal. Post.* ii. 12, 95, b, 10: μᾶλλον δὲ φανερῶς ἐν τοῖς καθόλου περὶ κινήσεως δεῖ λεχθῆναι περὶ αὐτῶν. The *Physics*, however, is the earliest of the works on Natural Science. A negative line of proof also is found in the fact that in the *Categories*, the *Analytics*, and the *Topics*, none of the other writings are quoted.

on Propositions was added afterwards.[1] Later than the *Analytics* but earlier than the *Physics* may be placed the treatise which now forms the fifth book of the *Metaphysics*.[2] The Natural Philosophy came next. In that section the *Physics* comes first. It is projected in the *Analytics* and is referred to in the fifth book of the *Metaphysics*; but the latter is cited or presupposed not only in the metaphysical and ethical works but also in the majority of the other tracts concerning Natural Philosophy, while it on the other hand neither cites nor presupposes any one of them.[3] That the *De Cœlo*,[4] the treatise on *Growth and Decay*, and the *Meteorology*, follow the *Physics* in the order given, is very expressly stated in the *Meteorology* itself.[5] Whether the *Natural History* or the *De Anima* came next is not settled. It is very possible that the former work, extensive as it is, was begun before the other but completed after it.[6] With the *De Anima* we must connect those lesser tracts which point back to it some-

[1] See pp. 64, n. 1, p. 67, n. 1, p. 68 sq., and the treatise of Brandis quoted in the first-cited note, which (p. 256 sqq.), by a comparison of the *Analytics* with the *Topics*, establishes the earlier date of the latter.

[2] For, on the one hand, it is mentioned in the *Physics* and *De Gen. et Corr.* (*vide supra*, p. 76, n. 1, p. 124, n. 4); and, on the other, it seems in c. 30 *fin.* to refer to *Anal. Post.* i. 6, 75, a, 18 sqq., 28 sqq.; though the latter point is not certain.

[3] *Vide supra*, p. 81 sqq., *Ind. Arist.* 102, a, 53 sqq., 98, a, 27 sqq.

[4] Which we cannot, like Blass (*Rhein. Mus.* xxx. 498, 505), consider a 'hypomnematical' writing, not merely because of the references made to it, but on other grounds also.

[5] *Meteor.* i. 1, whereon cf. further p. 83, n. 1, *Ind. Arist.* 98, a, 44 sqq., and the quotation of the tract Π. ζῴων πορείας in the *De Cœlo*, ii. 2, given p. 125.

[6] That the completion of the *History of Animals* should not be put too early is clear from what has been said on p. 154, n. 4.

times expressly[1] and always by the nature of their contents. Some of these were no doubt composed after or with the writings on the *Parts*, the *Movement*, and the *Genesis of Animals*.[2] That group of tracts is undoubtedly later than the *Natural History*, the *De Anima*, and the treatises which followed upon it.[3] On the other hand, it is probably earlier than the *Ethics* and *Politics*, inasmuch as it can hardly be supposed that Aristotle would have broken in upon his studies in Natural Philosophy by undertaking extended works lying in a wholly different direction.[4] It would be less difficult to suppose that the ethical writings as a whole came before the physical.[5] This view is not excluded by any express internal references, excepting the reference to the *Physics* in the *Ethics*.[6] We must, nevertheless, decide in favour of the earlier construction of the Natural Philosophy texts, for a thinker who was so clearly convinced as Aristotle was that the student of ethics must have a knowledge of the human soul,[7] must be supposed to have put his inquiry into the soul before his researches into the moral activities and relations. There are, indeed, in the *Ethics* very unmistakable traces of his theory of the soul and of the treatise thereon.[8] Immediately after the *Ethics*

[1] Thus Π. *αἰσθήσεως*, Π. *ὕπνου*, Π. *ἐνυπνίων*, Π. *ἀναπνοῆς* (*Ind. Ar.* 102, b, 60 sqq.).

[2] *Vide supra*, p. 89 sqq.

[3] See pp. 89, n. 2, 89, n. 3, 87, n. 1: *Ind. Arist.* 99, b, 30 sqq.

[4] The further question of the relative order of the three writings named has been already discussed on p. 91 sq.

[5] Thus ROSE, *Arist. Libr. Ord.* 122 sqq.

[6] *Eth.* x. 3, 1174, b, 2. Cf. *Phys.* vi.–viii.

[7] *Eth.* i. 13, 1102, a, 23.

[8] Though Aristotle in *Eth.* i. 13, 1102, a, 26 sqq. refers, not to *De An.* iii. 9, 432, a, 22 sqq. ii. 3, but to the *ἐξωτερικοὶ λόγοι*, yet ii. 2 *init.* seems to presuppose

comes the *Politics*.[1] Judging by the internal references, the *Rhetoric* should be later than both, and the *Poetics* should be later than the *Politics* but before the *Rhetoric*. This, however, is probably true only of a part of the *Politics*—or rather only of those parts which Aristotle himself published, for his death seems to have intervened before he had completed that text as a whole.[2] So, again, in our so-called *Metaphysics*, we have in all probability a work which Aristotle left incomplete, and with which several other fragments, some genuine, some spurious, have been amalgamated since.[3]

the bulk of the theoretical writings. But that there are not many more of such traces may perhaps be explained by the fact that Aristotle did not wish to interfere with the practical aim of an ethical work (*Eth.* i. 1, 1095, a, 4, ii. 2, *init.*) by any discussions which were not indispensable to its purpose; cf. i. 13, 1102, a, 23.

[1] See p. 100, n. 1.

[2] See p. 127 *supra*, and *infra*, ch. xiii. And if this supposition is correct, it would also go to make it improbable that the *Ethics*, so closely allied with the *Politics*, should have been written before the works on natural science.

[3] Cf. p. 76 sqq., and with regard to citations of the *Metaphysics*, see p. 156, n. 2. Rose's supposition (*Arist. Libr. Ord.* 135 sqq. 186 sq.) that the *Metaphysics* preceded all the writings on natural science, or at any rate the zoological ones, makes the actual condition of that work an inexplicable puzzle. But there is also the fact that the *Physics*, as well as the *De Cœlo*, are quoted in numerous passages of the *Metaphysics* (*Ind. Ar.* 101, a, 7 sqq.) as already existing, while the *Metaphysics* are referred to in *Phys.* i. 9, 192, a, 35, as merely in the future.

## CHAPTER IV

### THE STANDPOINT, METHOD, AND DIVISIONS OF THE PHILOSOPHY OF ARISTOTLE

As Plato connects directly with Socrates, so Aristotle with Plato. Yet he made a comprehensive use of the earlier philosophies as well. He was better versed than any of the earlier teachers in the theories and writings of his forerunners, and it is with him a favourite method to preface his own inquiries with a retrospect of earlier opinions. He is wont to let them designate the problems to be dealt with. He is eager to refute their errors, to resolve their doubts, to bring out the truth which underlay their views. But the influence of the pre-Socratic systems upon Aristotle is far less apparent in the general structure of his system than it is in the treatment of special points. In principle, Plato had refuted them all. Aristotle is not under the same necessity to distinguish his position accurately from theirs.[1] He does not, at least in any of the extant writings, devote any space to such propaideutic efforts as those by which Plato established the claims of philosophy and the true meaning of know-

[1] Even in *Metaph.* i. 8 their principles are merely criticised briefly from an Aristotelian point of view, and the Eleatics and Heraclitus, about whom Plato busied himself so much, are passed over altogether.

ledge, as against 'the ordinary consciousness' on the one hand, and the Sophists on the other. Aristotle presupposes throughout that general point of view which characterised the Socratico-Platonic Philosophy of Ideas. His task is to work out, on these general lines, a more perfect system of knowledge, by a more exact definition of the leading principles, by a stricter accuracy ot method, and by an extension and improvement of all the scientific data? It is true that in his own writings the rare expressions of agreement with his teacher are almost lost sight of by comparison with his keen and constant polemic against Platonic views.[1] Yet in reality and in the whole his agreement with Plato is far greater than his divergence,[2] and his whole system cannot truly be understood until we treat it as a development and evolution of that of Plato and as the completion of that very Philosophy of Ideas which Socrates founded and Plato carried on.

In the first place, he agrees for the most part with Plato in his general views as to the meaning and office of Philosophy itself. To him, as to Plato, the *object* of

[1] We shall deal later on with this polemic, especially as it was directed against the doctrine of Ideas in *Metaph.* i. 9, xiii., xiv. &c. Only a few passages are found in which Aristotle expressly declares his agreement with Plato. Besides the passages noted on p. 12, and p. 14, n. 4, see *Eth. N.* i. 2, 1095, a, 32; ii. 2, 1104, b, 11; *De An.* iii. 4, 429, a, 27; *Polit.* ii. 6, 1265, a, 10.

[2] Cf. also the valuable remarks of STRÜMPELL, *Gesch. d. theor. Phil. d. Gr.* 177. Aristotle, as we have shown on p. 14, n. 3, not unfrequently includes himself in the first person along with the rest of the Platonic school. But his way of treating such a relation is the opposite to that of Plato. Whilst Plato puts his own view, even where it contradicts the original one of Socrates, into the mouth of his teacher, Aristotle not unfrequently attacks his teacher even where they agree in the main point, and only differ in opinion as to secondary matters.

Philosophy can be only Being as such,[1] *i.e.* Essence, or, to speak more accurately, the universal Essence of that which is actual.[2] Philosophy treats solely of the causes and basis of things,[3] and in fact of their highest and most universal basis, or, in the last resort, of that which presupposes nothing.[4] For the like reasons he ascribes to the philosopher in a certain sense a knowledge of everything, thinking, of course, of the point of unity where all knowledge converges.[5] As Plato had distinguished 'knowledge,' as the cognition of that which is Eternal and Necessary,

[1] *Anal. Post.* ii. 19, 100, a, 6: ἐκ δ' ἐμπειρίας . . . τέχνης ἀρχὴ καὶ ἐπιστήμης, ἐὰν μὲν περὶ γένεσιν, τέχνης, ἐὰν δὲ περὶ τὸ ὄν, ἐπιστήμης. *Metaph.* iv. 2, 1004, b, 15: τῷ ὄντι ᾗ ὂν ἔστι τινὰ ἴδια, καὶ ταῦτ' ἐστὶ περὶ ὧν τοῦ φιλοσόφου ἐπισκέψασθαι τἀληθές. *Ibid.* 1005, a, 2, c. 3, 1005, b, 10.

[2] *Metaph.* iii. 2, 996, b, 14 sqq.: τὸ εἰδέναι ἕκαστον . . . τότ' οἰόμεθα ὑπάρχειν, ὅταν εἰδῶμεν τί ἐστιν, &c.; vii. 1, 1028, a, 36: εἰδέναι τότ' οἰόμεθα ἕκαστον μάλιστα, ὅταν τί ἐστιν ὁ ἄνθρωπος γνῶμεν ἢ τὸ πῦρ, μᾶλλον ἢ τὸ ποιὸν ἢ τὸ ποσὸν ἢ τὸ ποῦ, &c.; c. 6, 1031, b, 20: τὸ ἐπίστασθαι ἕκαστον τοῦτό ἐστι τὸ τί ἦν εἶναι ἐπίστασθαι, and cf. l. 6; *ibid.* xiii. 9, 1086, b, 5: the determination of the notion of the thing is indispensable, ἄνευ μὲν γὰρ τοῦ καθόλου οὐκ ἔστιν ἐπιστήμην λαβεῖν; c. 10, 1086, b, 33: ἡ ἐπιστήμη τῶν καθόλου; iii. 6 *fin.*: καθόλου αἱ ἐπιστῆμαι πάντων; iii. 4, 999, b, 26: τὸ ἐπίστασθαι πῶς ἔσται, εἰ μή τι ἔσται ἓν ἐπὶ πάντων; *ibid.* a, 28, b, 1; xi. 1, 1059, b, 25. *Anal. Post.* i. 11 *init.*, ii. 19, 100, a, 6, i. 24, 85, b, 13; and *Eth. N.* vi. 6 *init.*, x. 10, 1180, b, 15. More *infra*, in chapter v.

[3] *Anal. Post.* i. 2 *init.*: ἐπίστασθαι δὲ οἰόμεθ' ἕκαστον . . . ὅταν τήν τ' αἰτίαν οἰώμεθα γιγνώσκειν δι' ἣν τὸ πρᾶγμά ἐστιν . . . καὶ μὴ ἐνδέχεσθαι τοῦτ' ἄλλως ἔχειν. *Ibid.* c. 14, 79, a, 23, ii. 11 *init.* *Eth. N.* vi. 7, 1141, a, 17. *Metaph.* i. 1, 981, a, 28, 982, a, 1, c. 2, 982, a, 12, 982, b, 2 sqq., vi. 1, *init.* Cf. SCHWEGLER, *Arist. Metaph.* iii. 9.

[4] *Phys.* i. 1, 184, a, 12: τότε γὰρ οἰόμεθα γινώσκειν ἕκαστον, ὅταν τὰ αἴτια γνωρίσωμεν τὰ πρῶτα καὶ τὰς ἀρχὰς τὰς πρώτας καὶ μέχρι τῶν στοιχείων. *Ibid.* ii. 3 *init.* *Metaph.* i. 2, 982, b, 9: δεῖ γὰρ ταύτην [that science which is to deserve the name σοφία] τῶν πρώτων ἀρχῶν καὶ αἰτιῶν εἶναι θεωρητικήν; c. 3 *init.*: τότε γὰρ εἰδέναι φαμὲν ἕκαστον, ὅταν τὴν πρώτην αἰτίαν οἰώμεθα γνωρίζειν; iii. 2, 996, b, 13, iv. 2, 1003, b, 16, iv. 3, 1005, b, 5 sqq.

[5] *Metaph.* i. 2, 982, a, 8, 21, iv. 2, 1004, a, 35.

from Fancy or 'Opinion,' whose sphere is the contingent, so also Aristotle. To him, as to Plato, knowledge arises out of wonder, out of the bewilderment of the common consciousness with itself.[1] To him, its object is exclusively that which is universal and necessary; for the contingent cannot be *known*, but only *opined*. It is an opinion, when we believe that a thing might be otherwise; it is knowledge, when we recognise the impossibility of its being otherwise. So far from 'Opinion' and 'Knowledge' being all the same, it is rather true, as Aristotle holds, that it is utterly impossible to know and to opine about the same subject at the same time.[2] So, again, 'Knowledge' cannot consist in Perception, for that tells us only of individual things, not of the universal, only of facts, not of causes.[3] In like manner Aristotle distinguishes 'Knowledge' from mere 'Experience' by the test that the latter gives us in any matter only a '*That*,' while the former gives us a '*Why*' also:[4] which is the very mark that Plato used to distinguish 'Knowledge' from 'True Opinion.'

[1] *Metaph.* i. 2, 982, b, 12: διὰ γὰρ τὸ θαυμάζειν οἱ ἄνθρωποι καὶ νῦν καὶ τὸ πρῶτον ἤρξαντο φιλοσοφεῖν, &c. *Ibid.* 983, a, 12. Cf. ZELLER, *Ph. d. Gr.*, pt. ii. div. 1, p. 511, 4.

[2] *Anal. Post.* i. 33; cf. *ibid.* c. 6 *fin.* c. 8, *init.* c. 30 sqq. *Metaph.* vii. 15, vi. 2, 1026, b, 2 sqq. *Eth. N.* vi. 3, 1139, b, 18, c. 6 *init.* To this line of thought belongs the refutation of the principle, that for everyone that is true which seems true to him, which is dealt with in *Metaph.* iv. 5, 6, much as it is treated in Plato's *Theætetus.*

[3] *Anal. Post.* i. 31: οὐδὲ δι' αἰσθήσεως ἔστιν ἐπίστασθαι. For perception has always to do with individuals (more on this subject *infra*). τὸ δὲ καθόλου καὶ ἐπὶ πᾶσιν ἀδύνατον αἰσθάνεσθαι, &c. Even though we could *see* that the angles of a triangle are equal to two right angles, or that in an eclipse of the moon the earth stands between the sun and the moon, yet this would be no knowledge, so long as the universal reasons of these phenomena remained unknown to us.

[4] *Metaph.* i. 1, 981, a, 28.

Finally, Aristotle is at one with Plato also in this, that both of them proclaim Philosophy to be the mistress of all other sciences, and Science in general to be the highest and best that man can reach, and the most essential element of his happiness.[1]

Nevertheless, it is also true that the Aristotelian notion of Philosophy does not completely coincide with the Platonic. To Plato, Philosophy, regarded as to its content, is a term which includes all spiritual and moral perfection, and it comprehends therefore the *practical* as well as the *theoretic* side; and yet, when regarded as to its essence, he distinguishes it very sharply from every other form of human activity. Aristotle, on the contrary, marks it off more strictly from the practical side of life; while, on the other

[1] See *Metaph.* i. 2, 982, b, 4: ἀρχικωτάτη δὲ τῶν ἐπιστημῶν, καὶ μᾶλλον ἀρχικὴ τῆς ὑπηρετούσης, ἡ γνωρίζουσα τίνος ἕνεκέν ἐστι πρακτέον ἕκαστον· τοῦτο δ' ἐστὶ τἀγαθὸν ἐν ἑκάστοις. But that science is one which investigates the highest reasons and causes, since 'the good' and 'the highest end' are included among these. *Ibid.* l. 24: δῆλον οὖν, ὡς δι' οὐδεμίαν αὐτὴν ζητοῦμεν χρείαν ἑτέραν, ἀλλ' ὥσπερ ἄνθρωπός φαμεν ἐλεύθερος ὁ αὑτοῦ ἕνεκα καὶ μὴ ἄλλου ὤν, οὕτω καὶ αὕτη μόνη ἐλευθέρα οὖσα τῶν ἐπιστημῶν· μόνη γὰρ αὐτὴ αὑτῆς ἕνεκέν ἐστιν· διὸ καὶ δικαίως ἂν οὐκ ἀνθρωπίνη νομίζοιτο αὐτῆς ἡ κτῆσις . . . ἀλλ' οὔτε τὸ θεῖον φθονερὸν ἐνδέχεται εἶναι, . . . οὔτε τῆς τοιαύτης ἄλλην χρὴ νομίζειν τιμιωτέραν· ἡ γὰρ θειοτάτη καὶ τιμιωτάτη . . . ἀναγκαιότεραι μὲν οὖν πᾶσαι ταύτης, ἀμείνων δ' οὐδεμία; xii. 7, 1072, b, 24: ἡ θεωρία τὸ ἥδιστον καὶ ἄριστον. In *Eth. N.* x. 7: 'theoria' is the most essential ingredient of perfect happiness; cf. *e.g.* 1117, b, 30: εἰ δὴ θεῖον ὁ νοῦς πρὸς τὸν ἄνθρωπον, καὶ ὁ κατὰ τοῦτον βίος θεῖος πρὸς τὸν ἀνθρώπινον βίον· οὐ χρὴ δὲ κατὰ τοὺς παραινοῦντας ἀνθρώπινα φρονεῖν ἄνθρωπον ὄντα οὐδὲ θνητὰ τὸν θνητὸν, ἀλλ' ἐφ' ὅσον ἐνδέχεται ἀθανατίζειν καὶ πάντα ποιεῖν πρὸς τὸ ζῆν κατὰ τὸ κράτιστον τῶν ἐν αὑτῷ . . . τὸ οἰκεῖον ἑκάστῳ τῇ φύσει κράτιστον καὶ ἥδιστόν ἐστιν ἑκάστῳ· καὶ τῷ ἀνθρώπῳ δὴ ὁ κατὰ τὸν νοῦν βίος, εἴπερ τοῦτο μάλιστα ἄνθρωπος· οὗτος ἄρα καὶ εὐδαιμονέστατος; c. 8, 1178, b, 28: ἐφ' ὅσον δὴ διατείνει ἡ θεωρία, καὶ ἡ εὐδαιμονία. Cf. c. 9, 1179, a, 22, *Eth. Eud.* vii. 15 *fin.* See further in chapter xii., *infra.*

hand, he brings it into a closer relation with the experimental sciences. His view is that Philosophy is exclusively an affair of the theoretic faculty. He distinguishes from it very sharply the practical activities (πρᾶξις), which have their end in that which they produce (not, like Philosophy, in the activity itself), and which belong not purely to thought but also to opinion and the 'unreasoning part of the soul.' He distinguishes also the artistic creative effort (ποίησις) which is likewise directed to something outside itself.[1] With Experience, on the other hand, he connects Philosophy more closely. Plato had banished all dealings with the sphere of change and becoming out of the realm of 'Knowledge' into that of 'Opinion.' Even as to the passage from the former to the latter, he had only the negative doctrine that the contradictions of opinion and fancy ought to lead us to go further and to pass to the pure treatment of Ideas. Aristotle, as we shall presently see, allows to Experience a more positive relation to Thought. The latter, with him, proceeds out of the former by an affirmative movement—that, namely, in which the data given in Experience are brought together into a unity.

Furthermore, we find that Plato was but little interested in the descent from the treatment of the Idea to the individual things of the world of appearance—the phenomena. To him, the pure Ideas are the one

[1] Besides the passage just given, see *Eth. N.* vi. 2, c. 5, 1140, a, 28, b, 25; x. 8, 1178, b, 20; vi. 1, 1025, b, 18 sqq.; xi. 7; *De An.* iii. 10, 433, a, 14; and *De Cœlo*, iii. 7, 306, a, 16. The same is repeated by Eudemus *Eth.* i 5 *fin.*, and by the author of *Metaph.* ii. 1, 993, b, 20.

essential object of philosophic knowledge. Aristotle concedes that scientific knowledge has to do only with the universal essence of things; yet he does not stop at that point, for he regards it as the peculiar task of Philosophy to deduce the Individual from the Universal (as in *ἀπόδειξις*, *vide infra*). Science has to begin with the Universal, the Indeterminate; but it must pass on to the Determinate.[1] It has to explain the data, the phenomena.[2] It must not, therefore, think little of anything, however insignificant, for even there inexhaustible treasures of possible knowledge must lie.[3] It is for a like reason that Aristotle makes for scientific thought itself rules less strict than Plato's. He takes

[1] *Metaph.* xiii. 10, 1087, a, 10: *τὸ δὲ τὴν ἐπιστήμην εἶναι καθόλου πᾶσαν . . . ἔχει μὲν μάλιστ' ἀπορίαν τῶν λεχθέντων, οὐ μὴν ἀλλ' ἔστι μὲν ὡς ἀληθὲς τὸ λεγόμενον, ἔστι δ' ὡς οὐκ ἀληθές· ἡ γὰρ ἐπιστήμη, ὥσπερ καὶ τὸ ἐπίστασθαι, διττὸν, ὧν τὸ μὲν δυνάμει τὸ δὲ ἐνεργείᾳ· ἡ μὲν οὖν δύναμις ὡς ὕλη [τοῦ] καθόλου οὖσα καὶ ἀόριστος τοῦ καθόλου καὶ ἀορίστου ἐστὶν, ἡ δ' ἐνέργεια ὡρισμένη καὶ ὡρισμένου τόδε τι οὖσα τοῦδέ τινος.*

[2] *Metaph.* i. 9, 992, a, 24 (attacking the doctrine of Ideas): *ὅλως δὲ ζητούσης τῆς σοφίας περὶ τῶν φανερῶν τὸ αἴτιον, τοῦτο μὲν εἰάκαμεν (οὐθὲν γὰρ λέγομεν περὶ τῆς αἰτίας ὅθεν ἡ ἀρχὴ τῆς μεταβολῆς)* &c. *De Cœlo*, iii. 7, 306, a, 16: *τέλος δὲ τῆς μὲν ποιητικῆς ἐπιστήμης τὸ ἔργον, τῆς δὲ φυσικῆς τὸ φαινόμενον ἀεὶ κυρ'ως κατὰ τὴν αἴσθησιν.* *De An.* i. 1, 402, a, 16: *ἔοικε δ' οὐ μόνον τό τί ἐστι γνῶναι χρήσιμον εἶναι πρός τὸ θεωρῆσαι τὰς αἰτίας τῶν συμβεβηκότων ταῖς οὐσίαις . . . ἀλλὰ καὶ ἀνάπαλιν τὰ συμβεβηκότα συμβάλλεται μέγα μέρος πρὸς τὸ εἰδέναι τὸ τί ἐστιν· ἐπειδὰν γὰρ ἔχωμεν ἀποδιδόναι κατὰ τὴν φαντασίαν περὶ τῶν συμβεβηκότων ἢ πάντων ἢ τῶν πλείστων, τότε καὶ περὶ τῆς οὐσίας ἕξομεν λέγειν κάλλιστα· πάσης γὰρ ἀποδείξεως ἀρχὴ τὸ τί ἐστιν, ὥστε καθ' ὅσους τῶν ὁρισμῶν μὴ συμβαίνει τὰ συμβεβηκότα γνωρίζειν . . . δῆλον ὅτι διαλεκτικῶς εἴρηνται καὶ κενῶς ἅπαντες* Cf. c. 5, 409, b, 11 sq.

[3] *Part. An.* i. 5, 645, a, 5: *λοιπὸν περὶ τῆς ζωϊκῆς φύσεως εἰπεῖν, μηδὲν παραλιπόντας εἰς δύναμιν μήτε ἀτιμότερον μήτε τιμιώτερον· καὶ γὰρ ἐν τοῖς μὴ κεχαρισμένοις αὐτῶν πρὸς τὴν αἴσθησιν κατὰ τὴν θεωρίαν ὅμως ἡ δημιουργήσασα φύσις ἀμηχάνους ἡδονὰς παρέχει τοῖς δυναμένοις τὰς αἰτίας γνωρίζειν καὶ φύσει φιλοσόφοις . . . διὸ δεῖ μὴ δυσχεραίνειν παιδικῶς τὴν περὶ τῶν ἀτιμωτέρων ζῴων ἐπίσκεψιν· ἐν πᾶσι γὰρ τοῖς φυσικοῖς ἔνεστί τι θαυμαστόν*, &c. *De Cælo*, ii. 12, 291, b, 25.

the content of 'Knowledge,' and of scientific proof, to include not only the Necessary, but also the Usual (τὸ ὡς ἐπὶ τὸ πολύ).[1] He deems it a sign of philosophic crudity that a man should demand the same logical strictness of all kinds of investigation,[2] when in fact it depends on the nature of the subject matter what amount of exactitude can be attained in each of the sciences.[3] Where coercive proof fails him, he is content

[1] *Anal. Post.* i. 30, iii. 12 *fin.* *Part. An.* iii. 2, 663, b, 27. *Metaph.* vi. 2, 1027, a, 20, xi. 8, 1064, b, sqq. *Eth. N.* i. 1, 1094, b, 19.

[2] *Eth. N.* i. 1, 1094, b, 11–27, c. 7, 1098, a, 26, ii. 2, 1104, a, 1, vii. 1 *fin.* ix. 1, 1165, a, 12 (*Polit.* vii. 7 *fin.* is not in point here). It is chiefly as regards the ethical discussions that Aristotle here denies the claim they have to a thorough accuracy, because the nature of the subject does not allow of any such result; for in judging of men and the issues of human action, much rests on estimates which are correct only 'in the main' and 'as a rule.'

[3] According to *Anal. Post.* i. 27, that science is more exact (ἀκριβεστέρα), which besides the ὅτι settles the διότι; that which has to deal with purely scientific questions, not with their application to some given case (ἡ μὴ καθ' ὑποκειμένου [ἀκριβεστέρα] τῆς καθ' ὑποκειμένου, οἷον ἀριθμητικὴ ἁρμονικῆς), and lastly that which deduces its results from a smaller number of assumptions (*e.g.* Arithmetic as compared with Geometry), or in other words the more abstract (ἡ ἐξ ἐλαττόνων τῆς ἐκ προσθέσεως, as is also said in *Metaph.* i. 2, 982, a, 26, the same example being adduced). The latter is thus expressed (*Metaph.* xiii. 3, 1078, a, 9): ὅσῳ δὴ ἂν περὶ προτέρων τῷ λόγῳ (that which, according to its notion or nature, is earlier, or stands nearer to the first principles; cf. p. 330 sqq.) καὶ ἁπλουστέρων τοσούτῳ μᾶλλον ἔχει τἀκριβές. From this it naturally follows, that the first philosophy, according to Aristotle, is capable of the greatest accuracy (cf. *Metaph.* i. 2, 982, a, 25: ἀκριβέσταται δὲ τῶν ἐπιστημῶν αἱ μάλιστα τῶν πρώτων εἰσί), and that every other science is capable of so much the less according as it descends more and more to the world of sensible things (cf. *ibid.* 1078, a, 11 sq.); for in the latter πολλὴ ἡ τοῦ ἀορίστου φύσις ἐνυπάρχει (*Metaph.* iv. 5, 1010, a, 3; further *infra*, in ch. vii. sec. 2). Therefore the natural sciences are necessarily less accurate than those which are concerned with what is constant, like the first Philosophy, pure Mathematics, and the doctrine of souls (of which *De An.* i. 1 *init.* extols the ἀκρίβεια); and those which have the transient as their object are less exact than Astronomy (*Metaph.* 1078, a, 11 sqq.). KAMPE (*Erkenntnisstheorie d. Ar.* 254) says, that in the scale of ἀκρίβεια

to put up with arguments possible and probable, and to postpone a more definite decision until a further analysis can be had.[1] It is not, however, the essential problems of philosophy which Aristotle so treats, but always special questions of ethics or natural philosophy, for which Plato himself had relaxed the strictness of his dialectical procedure, and put probability in the place of scientific proof. The real difference between them is only this, that Aristotle includes this kindred branch of knowledge *in* Philosophy; whereas Plato insists on treating everything except the pure Science of Ideas as merely matter of intellectual discourse, or as a condescension of the philosopher to the pressure of practical needs.[2] Why, asks Aristotle rightly, should the man who thirsts after knowledge not seek to learn at least a little, even where he cannot establish all?[3]

Aristotle cannot be justly accused of having compromised the unity of all spiritual effort by dividing

the science of nature takes the lowest place: but this would rather, as has been said in the preceding note, be true of Ethics and Politics.

[1] *De Cœlo*, ii. 5, 287, b, 28 sqq. c. 12 *init. Gen. An.* iii. 10, 760, b, 27, where to a discussion on the reproduction of bees he adds the remark: *οὐ μὴν εἴληπταί γε τὰ συμβαίνοντα ἱκανῶς, ἀλλ' ἐάν ποτε ληφθῇ, τότε τῇ αἰσθήσει μᾶλλον τῶν λόγων πιστευτέον, καὶ τοῖς λόγοις, ἐὰν ὁμολογούμενα δεικνύωσι τοῖς φαινομένοις. H. An.* ix. 37 *fin.* c. 42, 629, a, 22, 27. *Metaph.* xii. 8, 1073, b, 10 sqq. 1074, a, 15. *Meteor.* i. 79, *init.*: *περὶ τῶν ἀφανῶν τῇ αἰσθήσει νομίζομεν ἱκανῶς ἀποδεδεῖχθαι κατὰ τὸν λόγον, ἐὰν εἰς τὸ δυνατὸν ἀναγάγωμεν.* Cf. EUCKEN, *Meth. d. Arist. Forsch.* 125 sq. See further on this subject in the next chapter.

[2] *Rep.* vi. 511, B, sq. vii. 519, C, sqq.; *Pl.* 173, E; *Tim.* 29, B, sq. and *alib.* Cf. ZELLER, *Ph. d. Gr.*, Pt. i pp. 490, 516, 536 sq.

[3] *De Cœlo*, ii. 12 *init.*: *πειρατέον λέγειν τὸ φαινόμενον, αἰδοῦς ἀξίαν εἶναι νομίζοντας τὴν προθυμίαν μᾶλλον ἢ θράσους* (it does not occur to him that he himself might be accused rather of an unphilosophical modesty), *εἴ τις διὰ τὸ φιλοσοφίας διψῆν καὶ μικρὰς εὐπορίας ἀγαπᾷ περὶ ὧν τὰς μεγίστας ἔχομεν ἀπορίας.* Cf. *ibid.* 292, a, 14, c. 5, 287, b, 31 *Part. An.* i. 5, 644, b, 31.

off the theoretic from the practical activities.[1] That distinction is undeniably justified to the full; but the note of unity is expressly preserved in Aristotle's treatment by the fact that while he presents Θεωρία as the completion of the true human life, he also represents the practical activity as an indispensable element therein, as a moral upbringing is an indispensable condition precedent of ethical knowledge.[2] If it be true that this shutting back of 'Theory' upon itself, this exclusion from the notion of Philosophy of all practical need and effort (as it becomes apparent, for example, in the Aristotelian sketch of the Divine Life) did in fact prepare the way for the later withdrawal of the Wise Man from practical usefulness, nevertheless we should not overlook the fact that even here Aristotle only followed in the direction indicated before by Plato; for Plato's 'Philosopher' would also, if left to himself, live for 'theory' alone, and only take part in the life of the Republic on compulsion. Least of all can one agree with those who criticise Aristotle because he conceived the office of Philosophy, not from the point of view of an ideal humanly unattainable, but in a way that could be carried out in the actual world,[3] or with those who attack him by praising Plato for distinguishing between the ideal of knowledge and the scientific attainment of men.[4] If such a view of the relation of the ideal to actuality were in itself and in Aristotle's view well founded, it would only follow that he had sought, as

[1] RITTER, *Ges. d. Ph.* iii. 50 sqq.

[2] Besides the passages to be cited *infra*, on the inquiry into the 'highest good,' cf. *Eth. N.* x. 10, 1179, b, 20 sqq. i. 1, 1094, b, 27 sqq.

[3] RITTER, *ibid.* and p. 56 sq.

[4] *Ibid.* ii. 222 sqq.

every philosopher should, not *abstract* ideals, but the actual *essence* of things. Even this, however, is less than the truth. To Aristotle the Idea does in truth reach out beyond the phenomena—it is not entirely realised in any individual phenomenal thing, although it is not an *unactual* ideal even so. Aristotle recognised both sides with equal clearness. He sees that the goal of knowledge is set very high—that it cannot be reached by everyone—that even by the best it can only be imperfectly attained.[1] Yet he is never content to call it wholly unattainable or to limit the demands he makes upon Philosophy (as such) by the weakness of humanity. Indeed, the whole course of this account must have already shown how complete is his real agreement with Plato on just this very point.

In his philosophic method Aristotle likewise follows out in all essentials the lines which Socrates and Plato opened out. His method is the dialectic method, which indeed he himself carried to its highest perfection. With it he combines the observational method of the student of nature; and even though it be true that he does not succeed in getting a true equilibrium between the two, yet the mere fact that he combined them was one of the highest services rendered to philosophy among the Greeks. By that advance he made good the one-sidedness of the Philosophy of Ideas, so far as that was possible without a complete restatement of its principles. As Socrates and Plato always began by asking for the

[1] *Metaph.* i. 2, 982, b, 28, xii. 7, 1072, b, 24; *Eth. N.* vi. 7, 1141, b, 2 sqq., x. 7, 1177, b, 30, c. 8, 1178, b, 25; cf. *ibid.* vii. 1.

'idea' of each thing they dealt with, and set this kind of cognition as the basis of all other knowledge, so also does Aristotle delight to begin with an inquiry into the 'idea' of whatever his subject for the time being may be.[1] As Socrates and Plato commonly set out on such inquiries with the simplest questions—examples taken from everyday life, commonly accepted beliefs, arguments from uses of words and ways of speech—so too is Aristotle wont to find his starting-point for the definition of such ideas in prevalent opinions, in the views of earlier philosophers, and particularly in the expressions and names which are in common use on the subject and in the meaning of words.[2] Socrates sought to correct the uncertainty of such beginnings by means of a dialectical comparison of various opinions and experiences gathered from all sides. But in Aristotle this process is far more complete and is directed with more explicit consciousness to the scientific ends in view. As a rule, he commences every important inquiry with an accurate investigation as to the various points of view from which the matter in hand can be treated, as to the difficulties and contradictions which arise from the different views that might be taken, and as to the reasons which make for or against each view; and the task which he sets before the philosopher is simply that of finding, by a more accurate definition of the

[1] Thus, for instance, in *Phys.* ii. 1, iii. 1, iv. 1 sqq. iv. 10 sq. the notions of Nature, Motion, Space and Time are investigated; in *De An.* i. 1 sqq., ii. 1 sq. the notion of the Soul; in *Eth. N.* ii. 4 sq. the notion of Virtue; in *Polit.* iii. 1 sqq. the notion of the State, and so on.

[2] It will be shown later what significance universal opinion and the probable arguments deduced from it, had with Aristotle as a foundation for induction.

ideas involved, the solution of the difficulties disclosed.[1] Aristotle is thus working in truth wholly on the ground and along the lines of the Socratico-Platonic method of dialectic. He developed the Socratic Induction into a conscious technical device, and he completed it by the theory of the syllogism which he invented and by all the related logical inquiries. In his own writings he has left us a most perfect example of a dialectical investigation carried through with keen and strict fidelity from all sides of the subject. If we did not know it before, we should recognise at once in Aristotle's philosophic method the work of a scholar of Plato.

With this dialectical process he combines at the same time a mastery in all that concerns the observation of facts, and a passion for the physical explanation of them, which are not to be found in Socrates nor in Plato either. To Aristotle the most perfect definition of an idea is that which exhibits the causes of the thing,[2] for

[1] On this also more definite information will be given later.

[2] *De An.* ii. 2 *init.*: οὐ γὰρ μόνον τὸ ὅτι δεῖ τὸν ὁριστικὸν λόγον δηλοῦν . . . ἀλλὰ καὶ τὴν αἰτίαν ἐνυπάρχειν καὶ ἐμφαίνεσθαι. νῦν δ' ὥσπερ συμπεράσμαθ' οἱ λόγοι τῶν ὅρων εἰσίν· οἷον τί ἐστι τετραγωνισμός; τὸ ἴσον ἑτερομήκει ὀρθογώνιον εἶναι ἰσόπλευρον· ὁ δὲ τοιοῦτος ὅρος λόγος τοῦ συμπεράσματος· ὁ δὲ λέγων ὅτι ἐστὶν ὁ τετραγωνισμὸς μέσης εὕρεσις, τοῦ πράγματος λέγει τὸ αἴτιον. *Anal. Post.* ii. 1. sq.: every inquiry deals with four points, the ὅτι, the διότι, the εἰ ἔστι, the τί ἐστιν. These may, however, be reduced to the two questions: εἰ ἔστι μέσον and τί ἐστι τὸ μέσον· τὸ μὲν γὰρ αἴτιον τὸ μέσον, ἐν ἅπασι δὲ τοῦτο ζητεῖται. And after quoting some examples: ἐν ἅπασι γὰρ τούτοις φανερόν ἐστιν ὅτι τὸ αὐτό ἐστι τὸ τί ἐστι καὶ διὰ τί ἐστιν, &c. *Ibid.* c. 3 *init.* c. 8 *init.*; *ibid.* i. 31, 88, a, 5: τὸ δὲ καθόλου τίμιον ὅτι δηλοῖ τὸ αἴτιον. *Metaph.* vi. 1, 1025, b, 17: διὰ τὸ τῆς αὐτῆς εἶναι διανοίας τό τε τί ἐστι δῆλον ποιεῖν καὶ εἰ ἔστιν. *Ibid.* vii. 17, 1041, a, 27: φανερὸν τοίνυν ὅτι ζητεῖ τὸ αἴτιον· τοῦτο δ' ἐστὶ τὸ τί ἦν εἶναι, ὡς εἰπεῖν λογικῶς. ὃ ἐπ' ἐνίων μέν ἐστι τίνος ἕνεκα, . . . ἐπ' ἐνίων δὲ τί ἐκίνησε πρῶτον. Cf. *Anal. Post.* ii. 11 *init.*: ἐπεὶ δὲ ἐπίστασθαι οἰόμεθα ὅταν εἰδῶμεν τὴν αἰτίαν, αἰτίαι δὲ τέτταρες . . . πᾶσαι αὗται διὰ τοῦ μέσου δείκνυνται.

philosophy ought to explain the phenomena.[1] Therefore, in his view (as we shall see presently), it ought to take account not only of the idea and the final cause of a thing, but of the efficient and the material causes also. Holding as decisively as we shall see he does that a thing is to be explained by its own causes, he could not well be content with a method which should look only to the Universal which the 'Idea' gives, and neglect the immediate definiteness of the things themselves.[2] This is the reason of that careful regard for

[1] *Vid. supr.* p. 167.

[2] In this sense Aristotle not unfrequently contrasts the *logical* consideration of a subject (*i.e.* that which is only concerned with what is universal in its concept), either with the *analytical*, which enters more deeply into the peculiarity of the given case, (and which he also calls ἐκ τῶν κειμένων), or with the *physical* research which draws its result not from the concept of a phenomenon merely, but from its concrete conditions. The former, for instance, *Anal. Post.* i. 21 *fin.*, c 23, 84, a, 7, cf. c. 24, 86, a, 22, c, 32, 88, a, 19, 30; *Metaph.* vii. 4, 1029, b, 12, 1030, a, 25, c. 17, 1041, a, 28. The latter, *Phys.* iii. 5, 204, b, 4, 10 (cf. a, 34, *Metaph.* xi. 10, 1066, b, 21), c. 3, 202, a, 21; *De Cœlo*, i. 7, 275, b, 12; *Metaph.* xii. 1, 1069, a, 27, xiv. 1, 1087, b, 20 (similarly φυσικῶς and καθόλου, *De Cœlo*, i. 10 *fin.* c. 12, 283, b, 17). But here he takes the logical to be so much the more imperfect, the further removed it is from the concrete definiteness of the object. Cf. *Phys.* viii. 8, 264, a, 7: οἷς μὲν οὖν ἄν τις ὡς οἰκείοις πιστεύσειε λόγοις, οὗτοι καὶ τοιοῦτοί τινές εἰσιν· λογικῶς δ' ἐπισκοποῦσι κἂν ἐκ τῶνδε δόξειέ τῳ ταὐτὸ τοῦτο συμβαίνειν. *Gen. An.* ii. 8, 747, b, 28: λέγω δὲ λογικὴν [ἀπόδειξιν] διὰ τοῦτο ὅτι ὅσῳ καθόλου μᾶλλον πορρωτέρω τῶν οἰκείων ἐστὶν ἀρχῶν. And after a proof such as this has been brought forward, he adds (748, a, 7): οὗτος μὲν οὖν ὁ λόγος καθόλου λίαν καὶ κενός. οἱ γὰρ μὴ ἐκ τῶν οἰκείων ἀρχῶν λόγοι κενοί, &c. (similarly *De An.* i. 1, 403, a, 2: διαλεκτικῶς καὶ κενῶς; *Eth. Eud.* i. 8, 1217, b, 21: λογικῶς καὶ κενῶς). Hence in such cases he much prefers the physical treatment to the logical (e.g. *Gen. et Corr.* i. 2, 316, a, 10: ἴδοι δ' ἄν τις καὶ ἐκ τούτων, ὅσον διαφέρουσιν οἱ φυσικῶς καὶ λογικῶς σκοποῦντες, &c., see ZELLER, *Ph. d. Gr.*, pt. i. p. 869, 1), whereas in metaphysical researches on Ideas (*Metaph.* xiii. 5 *fin.*) he thinks the λογικώτεροι λόγοι are the ἀκριβέστεροι. See further, WAITZ, *Arist. Org.* ii. 353 sq.; BONITZ, *Arist. Metaph.* ii. 187; *Ind. Arist.* 432, b, 5 seq.; RASSOW, *Arist. de not. def. doctr.* 19 sq.

facts which has drawn down on him often enough the reproach of an unphilosophic empiricism.[1] He was not only one of the highest speculative thinkers—he was also one of the most accurate and untiring observers, and one of the most erudite men of learning that the world knows. As in his general theory he conceived of experience as the condition precedent of thought, and of perception as the matter out of which thoughts come forth, so in practice he did not fail to provide for his own system a broad substructure of experiential knowledge, and to base his philosophic dicta upon an all-round appreciation of the data of fact. Especially in regard to any theory of nature he insists that we should first know the phenomena and then look about for their causes.[2] We could not, of course, expect to find in him the sureness and accuracy of method which empirical science has in modern times attained. In Aristotle's day it was only in its infancy, and it suffered from the complete lack of the proper aids to observation and of the support of a developed mathematics. We

[1] Thus SCHLEIERMACHER, *Gesch. d. Phil.* p. 120, says of Aristotle: 'We cannot deny that there is a great want of speculative genius,' &c., and on p. 110 he contrasts the older Academics with him, as being 'more speculative'; but he sets out with a principle, according to which Aristotle must certainly come off badly: 'Never has one who first went through a great mass of empirical work become a true philosopher.' Thus also STRÜMPELL, *Theoret. Phil. d. Gr.* 156, who delivers the judgment—which, however, can scarcely be reconciled with his own observations on pp. 184 sqq., and appears to be in every way untenable—that Aristotle's general bent made him 'more suited for the collective comprehension of empirical and historical data, than for the solving of metaphysical difficulties.'

[2] Thus *Part. An.* i. 1, 639, b, 7 sqq., 640, a, 14.; *Hist. An.* i. 7, 491, a, 9 sq.; *Meteor.* iii. 2, 371, b, 21; *Anal. Pr.* i. 30, 46, a, 17 sqq. Aristotle appeals here (as in *Part. An.* 639, b, 7) especially to the progress of astronomy about which see *infra*, ch. ix. (middle). Cf. EUCKEN, *Methode d. Arist. Forsch.* 122 sq.

also notice that in Aristotle the empirical effort is still too often crossed by the speculative and dialectic methods which he took over directly from Platonism. Indeed, so far as natural science goes, it would be more just to charge him with too little empiricism than too much.[1] But it would be far truer to say simply that he carried both methods as far as could be expected of his day. The science of the Greeks began with speculation. The empirical sciences only attained to any sort of development at a late date, and largely by the efforts of Aristotle himself. Therefore it was natural that the dialectical method of Socrates and Plato, with its logical dissections and connections of ideas, guided by current opinions and the indications of language, should take precedence of any strict empirical rules. Aristotle stood in a close relation to the dialectical movement, and brought it in theory and practice, as we have just said, to completion. It was not to be expected that the art of empirical investigation should find in him an equally complete exponent, and therefore an accurate discrimination between the two methods was as yet far off. That could only come after the fuller development of the empirical sciences and the direct investigation of the theory of knowledge, which the modern centuries have brought to pass. All the greater is the credit due to Aristotle that his wide and direct scientific instinct led him even so soon to turn to the methods of

[1] This charge has been made by Bacon, and, since the above was first written, by Lewes (*Aristotle*, § 91, 97); and, through a one-sidedness not uncommon with him, by LANGE, *Gesch. d. Mater.* i. 61 sqq.

observation and to connect them as well as he then could with the dialectical treatment of ideas.[1]

That Aristotle's dialectic had to do with a far more extensive range of empirical data than Plato had to deal with is the reason why Aristotle's methods of exposition are distinguishable at a glance from Plato's by that air of formal logic which they wear. Aristotle does not limit himself to that unfolding of pure ideas which Plato expected of the philosopher,[2] though his own attempts at it were in truth but rare and partial. The ideal processes are for ever interrupted, in Aristotle, by references to experience, by examinations of ambiguous terms, by criticism of other views. The more extensive is the matter which he has to bring under the yoke of science, the more eager is he to see that every step in his far-reaching investigations should be assured on the one hand by a copious induction, and on the other by a careful observance of the rules of logic. His manner of presenting his work seems often dry and tedious as compared with Plato's; for the texts we now possess yield us but rare examples of that richness and charm for which his writings were praised no less than his master's. We miss wholly the dramatic life, the artistic finish, the fine mythical presentment which make us love the Dialogues.[3] But the *Corpus Aristotelicum* exhibits the peculiar qualities of a *philosophic* style in so high a degree that we ought not only

[1] For fuller information on the methodological principles of Aristotle and their application, see the next chapter; and EUCKEN, *Die Methode d. Arist. Forschung* (1872); cf. especially pp. 29 sqq. 122 sqq. 152 sqq.

[2] See Zeller's Plato, *passim*.

[3] Cf. p. 106 sq.

*not* to call him a 'bad writer,'[1] but ought rather to set him in this respect far above his great forerunner. He is accused of 'formalism,' though where the discussion grows more concrete, as in his physics or ethics, this falls away; but it will not be regarded as a blemish by those who remember how needful even in Plato's view this strict logical effort was—how much bewilderment among ideas must have been cured by keen distinctions in the meanings of words—how many fallacies will have been avoided by the exact analysis of the syllogism. Rather has Aristotle done the world immortal service in that he established a fixed basis for all scientific procedure, and won for thought thereby a security whose value to us we only overlook because we have grown too used to it to remember that it is great.

If, again, we endeavour to appreciate, so far as at this point we can, the standpoint and general view of the universe which we can call Aristotelian, we shall find two things. On the one hand, no one can overlook the basis he inherited from Socrates and Plato. Yet, on the other hand, there is an element of originality so notable and so sustained as to make us stigmatise the notion that Aristotle was a kind of dependent follower of Plato who did nothing but formally work up and complete his master's thought, as an error utterly unjust.[2]

Aristotle adheres not only to the Socratic proposition that Science has to do with the idea of things, but also to the further consequence which takes us into the heart of Plato's system, that that which is truly actual

[1] RITTER, iii. 28.
[2] BRANISS, *Gesch. d. Phil.*; see KANT, i. 179 sqq. 207 sq.

in a thing is only its essence as thought in the idea of it, and that all else is 'actual' only in so far as it partakes of that ideal essentiality. Yet, whereas to Plato this 'Essential Being' was a thing existing by itself, which he relegated to a separate ideal world beyond the world of experience, his follower recognises the truth that the Idea, as the essence of things, could not stand separate from the things themselves. Therefore he seeks to present the Idea, not as a Universal existing for itself apart, but as a common essence of things indwelling in the particular things themselves. In lieu of the negative relation to which the sundering of ideas and phenomena had led with Plato, he posits rather the positive relation of each to the other and their mutual dependence. Therefore he calls the sensible element the Matter, and the insensible essence the Form. He puts it that it is one and the same Being, here developed into actuality, there undeveloped and lying as a mere basis. So it comes that, for him, Matter must, by an inner necessity, strive upward to Form, and Form equally must present itself in Matter. In this transformation of Plato's metaphysic, it is easy to recognise the realism of the natural philosopher whose aim is the explanation of the actual. Just this is his strongest and ever recurrent charge against the Ideal Theory, that it leaves the world of phenomena, the things of Becoming and Change, unexplained. For his own part, he finds the very root-definitions of his metaphysic in his treatment of those processes wherein is the secret of all genesis and all change, whether by nature or by art.

Yet Aristotle, too, is barred from completing his philosophy in these directions by just that dualism of the philosophy of Ideas which he inherited from Plato. Hard as he tries to bring Form and Matter together, still to the last they always remain *two* principles, of which he can neither deduce one from the other, nor both from a third. Fully as they are worked out through the range of finite things, still the highest entity of all is nothing but the pure Spirit, left outside the world, thinking in itself—as the highest in man is that Reason which enters into him from without, and which never comes into any true unity with the individual side of his being. In this way, Aristotle is at once the perfection and the ending of the Idealism of Socrates and Plato: its perfection, because it is the most thorough effort to carry it throughout the whole realm of actuality and to explain the world of phenomenal things from the standpoint of the 'Idea'; but also its ending, since in it there comes to light the impossibility of ever holding together the Idea and the Phenomenon in any real unity, after we have once posited, in our definition of the ultimate basis of the world, an original opposition between them.

If we follow out the development of these principles in the Aristotelian system, and seek for that purpose to take a general view of the divisions he adopted, we are met at once with the unfortunate difficulty that, neither in his own writings nor in any trustworthy account of his method, is any satisfactory information on that point to be found.[1] If we should trust the later Peripatetics

[1] Cf. for what follows: RITTER, iii. 57 sqq.; BRANDIS, ii. b, 130

and the Neo-Platonic commentators, Aristotle had divided all philosophy into *Theoretic* and *Practical*, assigning to the former the office of perfecting the cognitive part of the soul, and to the latter that of perfecting the appetitive. In Theoretic Philosophy, they say, he again distinguished three parts: Physics, Mathematics, and Theology, also called First Philosophy or Metaphysics. Practical Philosophy likewise fell, it is said, into three: Ethics, Economics, and Politics.[1] There are not wanting indications in the Aristotelian writings which serve to support this statement. Aristotle often opposes to each other the theoretical and the practical reason.[2] He distinguishes between inquiries which are directed to Cognition, and those which are directed to Action.[3] Accordingly we find,

sqq.; TEICHMÜLLER, *Arist. Forsch.* ii. 9 sqq.; WALTER, *Die Lehre v. d. prakt. Vern.* 537 sqq.

[1] Thus AMMON. *in Qu. voc. Porph.* 7, a, sqq. (who adds the fourfold division of Mathematics into Geometry, Astronomy, Music, and Arithmetic), and after him DAVID, *Schol.* 25, a, 1; SIMPL. *Phys. init. Categ.* i. ε; PHILOP. *Schol. in Ar.* 36, a, 6, *Phys. init.*; ANATOL. *in Fabric. Bibl.* iii. 462 H.; EUSTRAT. in *Eth. N. init.*; ANON. *Schol. in Arist.* 9, a, 31. The division into theoretical and practical philosophy had already been given by ALEX. *in Anal. Pri. init.* and DIOG. v. 28. Further, the latter, in part diverging from the others, divides theoretical philosophy into Physics and Logic (which, however, he does not consider so much a real part as an instrument of Philosophy), practical philosophy into Ethics and Politics, and Politics into the science of the State and the science of the household. ALEX. *Top.* 17, gives as philosophical sciences, Physics, Ethics, Logic and Metaphysics; but as to Logic cf. below p. 187, n. 2.

[2] *De An.* iii. 9, 432, b, 26, c. 10, 433, a, 14; *Eth.* vi. 2, 1139, a, 6, cf. i. 13 *vers. fin.*; *Polit.* vii. 14, 1333, a, 24. For further information see chap. xi.

[3] *Eth.* i. 1, 1095, a, 5: ἐπειδὴ τὸ τέλος [τῆς πολιτικῆς] ἐστὶν οὐ γνῶσις ἀλλὰ πρᾶξις. Likewise, *ibid.* x. 10, 1179, a, 35, ii. 2, *init.*: ἐπεὶ οὖν ἡ παροῦσα πραγματεία οὐ θεωρίας ἕνεκά ἐστιν ὥσπερ αἱ ἄλλαι (οὐ γὰρ ἵν' εἰδῶμεν τί ἐστιν ἡ ἀρετὴ σκεπτόμεθα, ἀλλ' ἵν' ἀγαθοὶ γενώμεθα, ἐπεὶ οὐδὲν ἂν ἦν ὄφελος αὐτῆς), &c.

at an early date in his School, a division of Science into theoretic and practical.[1] He himself, however, is accustomed to add a third—the 'poietic science'[2]—because he distinguishes ποίησις or production from πρᾶξις or action, both by its source and by its end, saying that the former originates in the artistic faculty, the latter in the will,[3] and that production has its end outside itself in the work to be brought into being, but action has its end in the activity of the

[1] *Metaph.* ii. (α), 1, 993, b, 19: ὀρθῶς δ' ἔχει καὶ τὸ καλεῖσθαι τὴν φιλοσοφίαν ἐπιστήμην τῆς ἀληθείας. θεωρητικῆς μὲν γὰρ (wherein, however, the whole of philosophy is here included) τέλος ἀλήθεια, πρακτικῆς δ' ἔργον. *Eth. Eud.* i. 1, 1214, a, 8: πολλῶν δ' ὄντων θεωρημάτων . . . τὰ μὲν αὐτῶν συντείνει πρὸς τὸ γνῶναι μόνον, τὰ δὲ καὶ περὶ τὰς κτήσεις καὶ περὶ τὰς πράξεις τοῦ πράγματος. ὅσα μὲν οὖν ἔχει φιλοσοφίαν μόνον θεωρητικήν, &c.

[2] *Metaph.* vi 1, 1025, b, 18 sq.: ἡ φυσικὴ ἐπιστήμη . . . δῆλον ὅτι οὔτε πρακτική ἐστιν οὔτε ποιητική . . . . ὥστε εἰ πᾶσα διάνοια ἢ πρακτικὴ ἢ ποιητικὴ ἢ θεωρητική, ἡ φυσικὴ θεωρητική τις ἂν εἴη; c. 2, 1026, b, 4 (xi. 7): οὐδεμιᾷ γὰρ ἐπιστήμῃ ἐπιμελὲς περὶ αὐτοῦ [sc. τοῦ συμβεβηκότος] οὔτε πρακτικῇ οὔτε ποιητικῇ οὔτε θεωρητικῇ. The same division of ἐπιστήμη in *Top.* vi. 6, 145, a, 15; viii. 1, 157, a, 10. Further cf. *Eth. N.* vi. 3–5, c. 2, 1139, a, 27, x. 8, 1718, b, 20, and on the difference between poietic and theoretic science in *De Cœlo*, iii. 7, 306, a, 16; *Metaph.* xii. 9, 1075, a, 1, cf. ix. 2, 1046, b, 2, and Bonitz on this passage. Though Aristotle here speaks merely of an ἐπιστήμη (not of a φιλοσοφία) πρακτικὴ and ποιητική, these passages would justify our using the latter expression, since φιλοσοφία is synonymous with ἐπιστήμη when the latter signifies not merely knowledge in general, but science in the special sense of the term. And since in *Metaph.* vi. 1 (*vid. inf.* 183, n. 3) he gives three φιλοσοφίαι θεωρητικαί, this undoubtedly supposes that there is a non-theoretical, *i.e.* a practical or poietic philosophy. But one cannot believe that by the latter is meant, not that science which treats of πρᾶξις and ποίησις (Ethics, Politics, and the science of Art), but the faculty of the πρᾶξις and ποίησις itself, namely φρόνησις and τέχνη (Walter, *Lehre v. d. prakt. Vern.* 540 sq.). Φιλοσοφία never has this meaning, and even ἐπιστήμη cannot have it in this context. So again since certain branches are distinguished as practical and poietic from Physics, Mathematics and Metaphysics, which are the theoretic sciences, the former must likewise be really sciences. And what other place would be left for Ethics, &c.?

[3] *Metaph.* vi. 1, 1025, b, 22:

actor.[1] The two coincide, however, as opposed to the *theoretic* activity in this, that they have to do with the determination of that which *can* be either one way or another, whereas Knowledge has to do with the determination of that which *cannot* be any otherwise than as it is.[2] Aristotle does also speak of three theoretic Sciences, the first concerning things which are *movable* and *corporeal*, the second referring to things *unmoved though corporeal*, the third dealing with that which is *incorporeal* and *unmoved*: these being Physics, Mathematics, and the First Philosophy,[3] which

τῶν μὲν γὰρ ποιητικῶν ἐν τῷ ποιοῦντι ἡ ἀρχὴ ἢ νοῦς ἢ τέχνη ἢ δύναμίς τις, τῶν δὲ πρακτικῶν ἐν τῷ πράττοντι ἡ προαίρεσις. Hence *Eth.* vi. 5, 1140, b, 22: in the province of art it is better to err voluntarily; in that of morals involuntarily.

[1] *Eth.* vi. 4 *init.*: ἕτερον δ' ἐστὶ ποίησις καὶ πρᾶξις; c. 5, 1140, b, 3: ἄλλο τὸ γένος πράξεως καὶ ποιήσεως . . . . τῆς μὲν γὰρ ποιήσεως ἕτερον τὸ τέλος, τῆς δὲ πράξεως οὐκ ἂν εἴη· ἔστι γὰρ αὐτὴ ἡ εὐπραξία τέλος. *Ibid.* i. 1 *init.*

[2] *Eth.* vi. 3, 1139, b, 18: ἐπιστήμη μὲν οὖν τί ἐστιν ἐντεῦθεν φανερόν . . . . πάντες γὰρ ὑπολαμβάνομεν, ὃ ἐπιστάμεθα μὴ ἐνδέχεσθαι ἄλλως ἔχειν; c. 4 *init.*: τοῦ δ' ἐνδεχομένου ἄλλως ἔχειν ἔστι τι καὶ ποιητὸν καὶ πρακτόν, &c. Cf. c. 2, 1139, a, 2 sqq. *De Cœlo*, iii. 7, 306, a: *vid. supr.* p 167, n. 2; *Part. An.* i. 1, 640, a, 3: ἡ γὰρ ἀρχὴ τοῖς μὲν [the theorists] τὸ ὄν, τοῖς δὲ [the technicists] τὸ ἐσόμενον.

[3] *Metaph.* vi. 1 (xi. 7) where among other things 1026, a, 13: ἡ μὲν γὰρ φυσικὴ περὶ ἀχώριστα μὲν ἀλλ' οὐκ ἀκίνητα, τῆς δὲ μαθηματικῆς ἔνια περὶ ἀκίνητα μὲν οὐ χωριστὰ δ' ἴσως, ἀλλ' ὡς ἐν ὕλῃ. ἡ δὲ πρώτη [sc. φιλοσοφία] καὶ περὶ χωριστὰ καὶ ἀκίνητα . . . ὥστε τρεῖς ἂν εἶεν φιλοσοφίαι θεωρητικαί, μαθηματική, φυσική, θεολογική. Similarly xii. 1, 1096, a, 30, c, 6 *init.*; *De An.* i. 1, 403, b, 7 sqq. About the name of the first philosophy, cf. also p. 76, *supra.* As to Mathematics as the science of numbers and quantity, and the abstraction peculiar to it, whereby it does not consider a body according to its physical properties, but only from the point of view of magnitude in space, and, in determining number and quantity, disregards the intrinsic condition of that in which they occur, see *Phys.* ii. 2, 193, b, 31 sqq.; *Anal. Post.* i. 10, 76, b, 3, c. 13, 79 a, 7; *Anal. Pri.* i. 41, 49, b, 35; *Metaph.* xi. 4, c. 3, 1061, a, 28, vii. 10, 1036, a, 9, xiii. 2, 1077, a, 9 to c. 3 *fin.*, iii. 2, 997, b, 20, *ibid.* 996, a, 29; *De An.* iii. 7 *fin.* Detached statements on Mathematics are found in many places, e.g. *Metaph.* i. 2, 982, a, 26; *De Cœlo*, iii. 1, 299, a, 15, c. 7, 306, a, 26; *De An.* i. 1, 402, b, 16. Cf. BRANDIS, p. 135

he names also Theology, and treats as the pinnacle of all knowledge.[1]

If, however, we attempt to apply the suggested division to the contents of the Aristotelian books,[2] we

sqq. The contradiction which RITTER, iii. 73 sq., finds in Aristotle, viz. that a sensible substratum is first denied and afterwards attributed to Mathematics, and that its object is now designated as removed, now as not removed, from what is sensible, is partly solved by the distinction of the purely mathematical from the applied sciences, and partly and chiefly by the remark that Aristotle nowhere says that the object of Mathematics *is* a χωριστὸν, but only that it is *considered* as such, *i.e.* by abstracting from its sensible nature; in *Metaph.* xii. 8, 1073, b, 3, moreover, Astronomy according to the common reading is not called 'the truest philosophy,' but the οἰκειοτάτη, the most important of the mathematical sciences for the discussion in hand; still Bonitz is right in reading: τῆς οἰκειοτάτης φιλοσοφίᾳ τῶν μαθηματικῶν ἐπιστημῶν.

[1] *Metaph.* vi. 1, 1026, a, 21 (and almost the same in xi. 7, 1064, b, 1), after what is given in the preceding note: τὴν τιμιωτάτην [ἐπιστήμην] δεῖ περὶ τὸ τιμιώτατον γένος εἶναι. (For, as is said in 1064, b, 5: βελτίων καὶ χείρων ἑκάστη λέγεται κατὰ τὸ οἰκεῖον ἐπιστητόν.) αἱ μὲν οὖν θεωρητικαὶ τῶν ἄλλων ἐπιστημῶν αἱρετώτεραι, αὕτη δὲ τῶν θεωρητικῶν. He discusses at length in *Metaph.* i. 2, why the first philosophy especially deserves the name σοφία: because, as perceiving the most universal, it gives the most comprehensive knowledge; because it investigates what is most difficult to be known; because the science of the last reasons is the most accurate (ἀκριβεστάτη) and gives the most perfect instruction as to causes; because, more than any other, it pursues knowledge for its own sake; and because, as the science of principles, and hence also of final ends, it must govern all others. In *Top.* viii. 1, 157, a, 9, the following is given as an example of a division: ὅτι ἐπιστήμη ἐπιστήμης βελτίων ἢ τῷ ἀκριβεστέρα εἶναι ἢ τῷ βελτιόνων. Aristotle in *Metaph.* xii. 9, 1074, b, 29 sq. also supposes that the value of knowledge is proportioned to that of its object. The universal pre-eminence of the theoretical over the practical and poietic sciences does not, however, rest on this, nor on their greater exactness, for some of them (the zoological and psychological sciences) have no superiority over Ethics in either respect; but primarily on the fact that knowledge is here an end in itself; cf. *Metaph.* i. 1, 981, b, 17 sqq. 982, a, 1.

[2] Thus Ravaisson (*Essai sur la Métaphysique d'Aristote*, i. 244 sqq.), who wishes to subdivide theoretical philosophy into Theology, Mathematics and Physics, practical philosophy into Ethics, Economics and Politics, and poietic philosophy into Poetics, Rhetoric and Dialectics.

run at once into manifold troubles. Of all that Aristotle wrote, the only thing which would fall under 'poietic science' is the *Poetics*; for he himself relegates the *Rhetoric* to another section by indicating that it is a side-branch of Dialectics and Politics,[1] and Dialectics cannot be disconnected from Analytics or Logic.[2]

If we were to conclude from this difficulty that the division into *two* groups—theoretic and practical—was preferable to the division into *three*, we should thereby be cutting ourselves loose from the statements of Aristotle himself. It further appears that in the presentation of his system he took no account of the existence of Mathematics. The one mathematical work to which he gives a reference, and which can with certainty be taken to be genuine—the tract on Astronomy—belongs, according to the classification above indicated, to

[1] *Rhet.* i. 2, 1356, a, 25: ὥστε συμβαίνει τὴν ῥητορικὴν οἷον παραφυές τι τῆς διαλεκτικῆς εἶναι καὶ τῆς περὶ τὰ ἤθη πραγματείας, ἣν δίκαιόν ἐστι προσαγορεύειν πολιτικήν. c. 3, 1359, b, 8: ὅπερ γὰρ καὶ πρότερον εἰρηκότες τυγχάνομεν ἀληθὲς ἐστιν, ὅτι ἡ ῥητορικὴ σύγκειται μὲν ἔκ τε τῆς ἀναλυτικῆς ἐπιστήμης καὶ τῆς περὶ τὰ ἤθη πολιτικῆς, ὁμοία δ' ἐστὶ τὰ μὲν τῇ διαλεκτικῇ τὰ δὲ τοῖς σοφιστικοῖς λόγοις. *Eth.* i. 1, 1094, b, 2: ὁρῶμεν δὲ καὶ τὰς ἐντιμοτάτας τῶν δυνάμεων ὑπὸ ταύτην [τὴν πολιτικὴν] οὔσας, οἷον στρατηγικήν, οἰκονομικήν, ῥητορικήν· χρωμένης δὲ ταύτης ταῖς λοιπαῖς τῶν πρακτικῶν ἐπιστημῶν, &c. These expressions seem to have a direct reference to the passage cited from the *Rhetoric*. Aristotle sees in it an application of Dialectics for the purposes of Politics; and since the character of a science depends on its purpose, he includes it in the practical section. Hence, although in itself an artistic science, and designated as such by Aristotle (e.g. *Rhet.* i. 1354, a, 11 sq. b, 21, 1355, a, 4, 33, b, 11, c. 2, 1356, b, 26 sqq.; rhetorical theories are also called τέχναι, cf. *supra*, p. 72, 2, 73, 1), still he does not seem to give Rhetoric an independent place in the system, as Brandis does (ii. b, 147), and still more decidedly Döring (*Kunstl. d. Arist.* 78).

[2] So in *Top.* i. 1 *init.* c. 2, it is plainly designated as an auxiliary science to philosophy in general, and especially to the theoretical investigations.

Physics. Of the others, they are either of doubtful authenticity or, in any case, the absence of any references leaves us to suspect that these were not considered an essential part of the connected exposition of his system.[1] The *Physics*, again, is spoken of as the 'second,'[2] not the third, philosophy—as if there were no thought of Mathematics standing between it and the 'First Philosophy:' and Aristotle himself refers the *Mathematical Axioms* to the 'First Philosophy.'[3]

As regards Practical Philosophy, Aristotle does not divide it into Ethics, Economics and Politics[4]—like the later commentators[5] who were misled in that matter by the spurious Economics. He distinguishes in the first place[6] the main Ethical Science—which he desires to call 'Politics'[7]—from the auxiliary sciences of Economics, Military Tactics, and Rhetoric[8]: and then in 'Politics' he distinguishes that section which treats of

[1] About these writings cf. p. 86, n. 1, *supra*.

[2] *Metaph.* vii. 11, 1037, a, 14: *τῆς φυσικῆς καὶ δευτέρας φιλοσοφίας*.

[3] *Metaph.* iv. 3 *init.* (xi. 4).

[4] Aristotle in *Eth.* vi. 9, 1142, a, 9, besides *φρόνησις* which relates to individual action, certainly names *οἰκονομία* and *πολιτεία* also: but in 1141, b, 31 he has divided Politics (*i.e.* the science of the life in society with the exclusion of Ethics) into *οἰκονομία, νομοθεσία, πολιτική*, so that, according to this, Economics forms a part of Politics. Still more definitely Eudemus in *Eth. Eud.* i. 8, 1218, b. 13, combines the *πολιτικὴ καὶ οἰκονομικὴ καὶ φρόνησις* as the three parts of practical science; this division must consequently belong to the oldest Peripatetics.

[5] With whom, besides Ravaisson, RITTER, iii. 302, also agrees.

[6] *Eth.* i. 1, 1094, a, 18 sqq., vi. 9, 1141, b, 23 sqq.

[7] *Eth.* i. 1, *ibid.*, and 1095, a, 2, i. 2 *init.* and *fin.*, ii. 2, 1105, a, 12, vii. 12 *init.*, cf. i. 13, 1102, a, 23. *Rhet.* i. 2, 3, *vid. supr.* p. 185, n. 1.

[8] *Eth.* i. 1, 1094, b, 2; *Rhet.* i. 2, 1356, a, 25. Also in the first book of the *Politics*, Economics, as far as Aristotle has treated the subject, is taken to belong to the science of the State.

the moral action of the individual from that which treats of the State.[1]

It is also important to remember that in the above division, whether we take it to be twofold or threefold, there is no place for Logic. The later Peripatetics get over this difficulty by the theory—which is a point of controversy between them and the Stoics—that Logic is not a part of Philosophy, but only an instrument for it.[2] Aristotle himself never hints at this distinction,[3] although he does, of course, treat Logic as a Methodology.[4] Nor will the suggestion help us much; for since Aristotle *had* worked out his Logic with such scientific care, it must have had *some* definite place in his system.[5] The only conclusion is that the scheme of subdivision, which we deduce from the above-quoted remarks of Aristotle, seems to be in part too wide and in part too narrow for the matter which his books contain.

A different subdivision of the system might be built

[1] *Eth.* i. 1, 1094, b, 7. So also in the lengthy discussion, x. 10.

[2] DIOG. v. 28; ALEX. in *Pri. Anal.* init., *Schol.* 141, a, 19, b, 25, in *Top.* 41, m, AMMON. *apud* WAITZ, *Arist. Org.* i. 44 *med.*; SIMPL. *Categ.* 1, ϛ, *Schol.* 39, b, and PHILOP. in *Categ. Schol.* in *Ar.* 36, a, 6, 12, 37, b, 46. The same in *Anal. Pri. ibid.* 143, a, 3. ANON. *ibid.* 140, a, 45 sqq. DAVID, in *Categ. Schol.* 25, a, 1, where there are also further fragmentary subdivisions of Logic and the logical writings.

[3] That in *Top.* i. 18 *fin.*, and viii. 14, 163, b, 9, he speaks of logical readiness as an organ of philosophy, is of course beside the point.

[4] *Supra*, p. 91 sq.

[5] No more trustworthy is Ravaisson's statement (*loc. cit.* 252, 264 sq.), that Analytics is no special science, but the form of all science. It is much rather the *knowledge* of this form, which constitutes a particular branch just as much as Metaphysics, which is the knowledge of the universal grounds of all Being. MARBACH, *Gesch. d. Phil.* i. 247, even thinks that 'there can be no doubt that the "Mathematics" which forms a part of philosophy is what is now called Logic.'

on the other remark, that all propositions and problems are either ethical, physical, or logical.[1] Under the logical head, however, Aristotle here comprehends both formal Logic and the First Philosophy or Metaphysics,[2] and this alone would prove that he could not here have meant to indicate a scheme for the presentation of his system, in which these two departments are kept so obviously distinct.

If, then, we are forced to give up the attempt to find in his own isolated remarks any key to the plan of his work which corresponds with the construction itself, nothing remains but to gather from the actual work as we have it, the method of the work he designed. Abstracting from those of his writings which are intended only as preliminary essays, or devoted to historical materials or collections concerning natural history, or taken up with philosophic criticism, we distinguish among Aristotle's writings four main masses. These are his investigations of Logic, of Metaphysics, of Natural History, and of Ethics. A fifth would be the

[1] *Top.* i. 14, 104, b, 19: *ἔστι δ' ὡς τύπῳ περιλαβεῖν τῶν προτάσεων καὶ τῶν προβλημάτων μέρη τρία. αἱ μὲν γὰρ ἠθικαὶ προτάσεις εἰσὶν, αἱ δὲ λογικαί . . . . ὁμοίως δὲ καὶ τὰ προβλήματα . . . . πρὸς μὲν οὖν φιλοσοφίαν κατ' ἀλήθειαν περὶ αὐτῶν πραγματευτέον, διαλεκτικῶς δὲ πρὸς δόξαν.* It is of no importance as against this, that, in dealing with the difference between knowledge and representation, Aristotle remarks in *Anal. Post.* i. 33 *fin.*: *τὰ δὲ λοιπὰ πῶς δεῖ διανεῖμαι ἐπί τε διανοίας καὶ νοῦ καὶ ἐπιστήμης καὶ τέχνης καὶ φρονήσεως καὶ σοφίας τὰ μὲν φυσικῆς τὰ δὲ ἠθικῆς θεωρίας μᾶλλον ἐστίν.*

[2] As an instance of logical propositions *Top. ubi sup.* mentions the principle, which belongs equally to Methodology or Analytics and to Metaphysics (cf. *Metaph.* iv. 2, 1004, a, 9 sqq., 1005, a, 2), that opposites fall under the same science. Again, in the instances given on p. 174, n. 2, *supra*, *λογικὸς* at one time stands for logical, at another for metaphysical inquiries; for the latter also in *Eth. Eud.* i. 8, 1217, b, 16.

Philosophy of Art, except that Aristotle did not work out any part of it except the *Poetics*. He seems to have forgotten to deduce these various branches of work from the idea and problem of philosophy as a whole, or to reduce them to any simpler plan of division. Of these five, the section of Logic and Methodology ought to come first, not only in the time order of the important texts,[1] but also in the order of exposition—for Aristotle himself describes it as a propaideutic for all other inquiries.[2] After the investigation of scientific method, the 'First Philosophy' must come. For, although the connected exposition of it belongs in time to the close of Aristotle's work,[3] nevertheless it contains the key to the philosophical understanding of the *Physics* and the *Ethics*, and it is from it we must obtain all the definitions, without which we could take not a step in either of these sciences—such as the definitions of the Four Causes, of Form and Matter, of the different senses of Being, of Substance and Accident, of the Mover and the Moved, &c. The very

[1] See *supra*, p. 156 seq.

[2] *Metaph.* iv. 3, 1005, b, 2: *ὅσα δ' ἐγχειροῦσι τῶν λεγόντων τινὲς περὶ τῆς ἀληθείας, ὃν τρόπον δεῖ ἀποδέχεσθαι, δι' ἀπαιδευσίαν τῶν ἀναλυτικῶν τοῦτο δρῶσιν· δεῖ γὰρ περὶ τούτων ἥκειν προεπισταμένους, ἀλλὰ μὴ ἀκούοντας ζητεῖν.* It is much the same for the question in hand, whether the *τούτων* is referred to *ἀναλυτικῶν*, or more correctly to the investigations indicated in the words *περὶ τῆς ἀληθείας* &c., since from the nature of the thing it comes to the same, whether he says, 'One must be acquainted with Analytics,' or 'One must be acquainted with what Analytics has to discuss.' Inadmissible, on the other hand, is Prantl's explanation (*Gesch. d. Log.* i. 137), which refers the *τούτων*, not to the words with which it is immediately connected, but to the *ἀξιώματα*, about which Aristotle has spoken above. As a consequence of this translation, Prantl thinks it monstrous that this passage should be used as a proof of the precedence of the Analytics.

[3] *Vid. supr.* p. 76 sqq., and p. 160, n.

name of the 'First Philosophy' expresses the fact that in the logical order it precedes all other material investigations, as being concerned with the discussion of the most universal of all presuppositions.[1] The *Physics* follow on after the 'First Philosophy,' and the *Ethics* follow the *Physics*, because the latter is presupposed in the former.[2] The *Rhetoric* must be taken as belonging to Ethics.[3] The philosophy of Art, on the other hand, forms a section by itself, which is not brought into any definite connection with the rest. We can only treat it, therefore, as an appendix. To a like position we must relegate also Aristotle's occasional utterances as to Religion—for a Philosophy of Religion, in the true sense, was not within his view.

[1] Still more plainly than by the superlative πρώτη φιλοσοφία is this shown by the comparative: φιλοσοφία προτέρα (φυσικῆς, μαθηματικῆς), *Metaph.* vi. 1, 1026, a, 13, 30, *Gen. et Corr.* i. 318, a, 5.

[2] *Vid. supra*, p. 159.

[3] See *supra*, p. 185, n. 1.

# CHAPTER V

## LOGIC

FROM of old, Aristotle has been renowned as the founder of Logic, and he has deserved his fame. We must not, however, overlook the fact that he treated Logic, not as an independent science, but only from the point of view of Methodology, as the 'technique' of his philosophic investigations. In dealing with it, therefore, he does not contemplate by any means a full and uniform account of the powers of thought as a whole, but rather a simple inquiry into the forms and laws of scientific proof. Of the first half of his Logic—the *Topics*—he admits this himself.[1] Of the other and more important section—the *Analytics*—it follows partly from single references which assign to it the place of a Propaideutic of Science,[2] partly from the analogy of the *Topics* aforesaid, but more especially from the whole treatment of the subject. Of the two *Analytics*, the logical masterpieces of Aristotle, the first is concerned with Syllogisms, the second with the laws of Proof.[3] Only in connection with these investigations, and only in so

[1] *Top.* i. 1 *init.*: ἡ μὲν πρόθεσις τῆς πραγματείας μέθοδον εὑρεῖν, ἀφ' ἧς δυνησόμεθα συλλογίζεσθαι περὶ παντὸς τοῦ προτεθέντος προβλήματος ἐξ ἐνδόξων καὶ αὐτοὶ λόγον ὑπέχοντες μηθὲν ἐροῦμεν ὑπεναντίον. Cf. c. 2. c. 3: ἕξομεν δὲ τελέως τὴν μέθοδον, ὅταν ὁμοίως ἔχωμεν ὥσπερ ἐπὶ ῥητορικῆς καὶ ἰατρικῆς καὶ τῶν τοιούτων δυνάμεων· τοῦτο δ' ἐστὶ τὸ ἐκ τῶν ἐνδεχομένων ποιεῖν ἃ προαιρούμεθα.

[2] *Vid. supra*, p. 189, n. 2.

[3] The common theme of both

far as may be necessary thereto, did he stay to consider the theory of Propositions.[1] It was not until a later period,[2] (if at all) that he extended these hints into a separate treatise in the Περὶ ἑρμηνείας. In the same way, it is from the consideration of the Syllogism that he is led to the logical treatment of Notions. He touches on Definition in the *Analytics*,[3] merely as a matter connected with Proof; and, in fact, the logical properties of Notions as a whole are only taken up as incidental to the Syllogism.[4] The theory of the Categories, on the other hand, belongs more to Metaphysics than to Logic, because it is not deduced from the *logical* form of the Notion as such, or from the process of thought involved in its construction, but is derived rather from the natural division of those *real* relations, to which the Categories, according to their content, are referred.[5] The very name of 'Analytica'[6] indicates that in the

is thus designated in *Anal. Pri.* init.: πρῶτον μὲν εἰπεῖν περὶ τί καὶ τίνος ἐστὶν ἡ σκέψις, ὅτι περὶ ἀπόδειξιν καὶ ἐπιστήμης ἀποδεικτικῆς. Likewise at end of *Anal. Post.* ii. 19 *init.*: περὶ μὲν οὖν συλλογισμοῦ καὶ ἀποδείξεως, τί τε ἑκάτερόν ἐστι καὶ πῶς γίνεται, φανερὸν, ἅμα δὲ καὶ περὶ ἐπιστήμης ἀποδεικτικῆς· ταὐτὸν γάρ ἐστιν.

[1] *Anal. Pri.* i. 1–3. *Anal. Post.* i. 2, 72, b, 7.

[2] *Vid. supr.* p. 66, n. 1.

[3] *Anal. Post.* ii. 3 sqq. and cf. especially c. 10.

[4] The little that has to be mentioned with regard to this will be adduced later. The definition of the ὅρος in *Anal. Pri.* i. 1, 24, b, 16 alone shows (ὅρον δὲ καλῶ εἰς ὃν διαλύεται ἡ πρότασις) that Aristotle is going by an analytical method, and just as he proceeds from syllogisms to propositions, so in like manner he passes from propositions to notions. Both are merely considered as factors in the syllogism.

[5] Some other writings on Concepts, which were mentioned on p. 70, *supra*, seem to have had a purely logical character; but probably not one of them was the work of Aristotle.

[6] Aristotle not only calls both the principal logical writings Ἀναλυτικά (see p. 67, n. 1), but (*vid. supr.* p. 189, n. 2, and p. 185, n. 1) he uses the same designation for the science of which they treat.

investigations which we should class under 'Formal Logic,' Aristotle was chiefly concerned to determine the conditions of scientific procedure, and especially of scientific processes of proof.[1]

Socrates had revealed the method of forming Conceptions; Plato had added that of Division; Aristotle was the discoverer of the theory of Proof. This is to him so clearly the one important point, that he resolves into it the whole science of Methodology. It follows, then, that when the later Peripatetics described Logic[2] as an 'instrument' of philosophy,[3] and when accordingly the logical writings of Aristotle were in the end published together under the name of the 'Organon,'[4] this was in no way contrary to the

[1] *Ἀναλύειν* means to reduce a given thing to the parts of which it is composed, or to investigate the conditions through which it is brought about. In this sense Aristotle uses *ἀνάλυσις* and *ἀναλύειν* regularly for the reduction of syllogisms to the three figures, *e.g. Anal. Pri.* i. 32 *init.*: *εἰ . . . τοὺς γεγενημένους* [*συλλογισμοὺς*] *ἀναλύοιμεν εἰς τὰ προειρημένα σχήματα*, for which was written immediately before: *πῶς δ' ἀνάξομεν τοὺς συλλογισμοὺς εἰς τὰ προειρημένα σχήματα.* Cf. BONITZ, *Ind. Arist.* 48, b, 16. And since every investigation consists in tracing out the component parts and conditions of that with which it is concerned, *ἀναλύειν* together with *ζητεῖν* stands for 'investigate.' Thus *Eth. N.* iii. 5, 1112, b, 15: (*βουλεύεται . . . . οὐδεὶς περὶ τοῦ τέλους·*) *ἀλλὰ θέμενοι τέλος τι, πῶς καὶ διὰ τίνων ἔσται σκοποῦσι. . . . ἕως ἂν ἔλθωσιν ἐπὶ τὸ πρῶτον αἴτιον, ὃ ἐν τῇ εὑρέσει ἔσχατόν ἐστιν· ὁ γὰρ βουλευόμενος ἔοικε ζητεῖν καὶ ἀναλύειν τὸν εἰρημένον τρόπον ὥσπερ διάγραμμα. φαίνεται δ' ἡ μὲν ζήτησις οὐ πᾶσα εἶναι βούλευσις, οἷον αἱ μαθηματικαί, ἡ δὲ βούλευσις πᾶσα ζήτησις, καὶ τὸ ἔσχατον ἐν τῇ ἀναλύσει πρῶτον εἶναι ἐν τῇ γενέσει.* (Cf. TRENDELENBURG, *Elem. Log. Arist.* p. 47 sq.) The *ἀναλυτικὴ ἐπιστήμη* (*Rhet.* i.4, 1359, b, 10) designates accordingly the art of scientific inquiry, or the introduction to it, which is scientific methodology; and similarly *τὰ ἀναλυτικὰ* means 'that which deals with scientific inquiry,' *i.e.* the theory of it: as in *Metaph.* iv. 3, 1005, b, 2.

[2] On this designation, proved to have existed since the time of Cicero, cf. PRANTL, *Gesch. d. Log.* i. 514, 27, 535.

[3] *Vid. supr.* p. 187, n. 2.

[4] This name is not used by any of the Greek commentators

Master's own view.[1] The further theory that Logic, as being the 'Organon' of philosophy, could not be also a *part* of philosophy,[2] he would hardly have approved.

In order rightly to comprehend this Science of Method, it will first be necessary for us to go more closely into Aristotle's views concerning the nature and origin of Knowledge. For it is the conception of Knowledge which determines the aim and the direction of the procedure of Science; and the natural development of Knowledge in the mind of man must point the way for its systematic development in Science also.

All Knowledge relates to the *Essence of Things*—to the *Universal* properties which remain identical with themselves in all individual things, and to the *Causes* of all that is actual.[3] Conversely, however, it is true that the Universal is only to be known through

till the sixth century, as applied to the *writings*; it only came to this use later (cf. WAITZ, *Arist. Org.* ii. 293 sq.). On the other hand, the texts are, before that time, called by them ὀργανικὰ, because they refer to the ὄργανον (or ὀργανικὸν μέρος) φιλοσοφίας; cf. SIMPL. *in Categ.* 1, ε; PHILOP. *in Cat.* Schol. 36, a, 7, 15; DAVID, *ibid.* 25, a, 3.

[1] PRANTL, *Gesch. d. Log.* i. 136, is in this respect unreasonable, when he denounces 'the schoolmasters of later antiquity,' who, 'infected with the folly of the Stoic philosophy,' wished at any price to represent Logic as the tool of knowledge. This is really the position and meaning which Aristotle gives it. The theory that in the same sense as Physics and Ethics it has its own end in itself and its own object, or that it is meant to be a philosophically established presentment of the activity of human thought and nothing else (*ibid.* p. 138 sq.), is a supposition which can neither be proved from any definite statements of Aristotle, nor from the construction of his logical writings. The 'real-metaphysical side of the Aristotelian logic,' however, need not on this account be disregarded. Even if it is regarded as the Science of Method, it may have its foundations in Metaphysics; and even though it precede the latter, yet it may become necessary, in the end, to reduce it to metaphysical principles.

[2] *Vid. supr.* p. 187, n. 2.

[3] *Vid. supr.* pp. 163 sq., 173 sq.

the Individuals, the Essence only through Appearances, the Causes only through their Effects. This follows in part from Aristotle's metaphysical propositions about the relation of the individual to the universal, which will meet us hereafter; for if it is individual existence alone which can be called originally actual—if the Universals exist, not independently as 'Ideas' but only in attachment to individual things as 'properties'—it follows that the experiential knowledge of Individuals must necessarily precede the scientific knowledge of Universals.[1] Quite as directly, to Aristotle, will the same conclusion follow from the nature of man's powers of knowledge. For while he unhesitatingly admits that the soul must bear within itself the ground-principle of its knowledge, he is equally positive that it is not possible to attain any real knowledge except by means of experience. All learning presupposes, of course, some present knowledge, to which it joins on.[2] Out of this axiom there arises the doubt, which had given the earlier thinkers so much trouble,[3] about the possibility of learning at all. For either, as it seems, we

[1] Aristotle himself points out this connection of his doctrine of perception with his metaphysics in *De An.* iii. 8, 432, a, 2: ἐπεὶ δὲ οὐδὲ πρᾶγμα οὐθέν ἐστι παρὰ τὰ μεγέθη, ὡς δοκεῖ, τὰ αἰσθητὰ κεχωρισμένον, ἐν τοῖς εἴδεσι τοῖς αἰσθητοῖς τὰ νοητά ἐστι (cf. c. 4, 430, a, 6: ἐν δὲ τοῖς ἔχουσιν ὕλην δυνάμει ἕκαστόν ἐστι τῶν νοητῶν) τά τε ἐν ἀφαιρέσει λεγόμενα [abstract notions] καὶ ὅσα τῶν αἰσθητῶν ἕξεις καὶ πάθη. καὶ διὰ τοῦτο οὔτε μὴ αἰσθανόμενος μηθὲν οὐθὲν ἂν μάθοι οὐδὲ ξυνείη· ὅταν τε θεωρῇ, ἀνάγκη ἅμα φάντασμά τι θεωρεῖν· τὰ γὰρ φαντάσματα ὥσπερ αἰσθήματά ἐστι, πλὴν ἄνευ ὕλης.

[2] *Anal. Post.* i. *init*: πᾶσα διδασκαλία καὶ πᾶσα μάθησις διανοητικὴ ἐκ προϋπαρχούσης γίνεται γνώσεως—which he immediately proceeds to prove as to the different sciences, both as regards syllogistic and inductive proof. The like in *Metaph.* i. 9, 992, b, 30; *Eth.* vi. 3, 1139, b, 26.

[3] See ZELL., *Ph. d. Gr.* pt. i. 996, and pt. ii. a, 696.

must already be possessed of that knowledge from which all the rest is to be deduced—which is not in fact true—or else we have still to acquire it, in which case the said axiom does not hold for that which is the highest knowledge of all.[1] It was this difficulty that Plato sought to avoid by his doctrine of 'Anamnesis'—the latent recollection of a prior knowledge. But apart from all the other objections which he finds to lie against the pre-existence of the soul,[2] Aristotle is unable to reconcile himself with this theory, because it seems to him unthinkable that we should *have in us a knowledge without knowing it*;[3] not to speak of all the various absurdities to which a closer analysis of the notion of the existence of the Ideas in the soul would obviously lead.[4] His solution lies rather in that conception by means of which he has answered so many of the questions of metaphysics and natural philosophy—in the notion of 'Development'—in the distinction between the groundwork of potentiality and the completed actuality. The soul, he says, must certainly bear within itself in *some* sense its knowledge. For if even our Sense Perception

[1] *Anal. Post.* ii. 19, 99, b, 20: Every knowledge by argument supposes acquaintance with the highest principles (the *ἀρχαὶ ἄμεσοι, vid. inf.*): *τῶν δ' ἀμέσων τὴν γνῶσιν . . . διαπορήσειεν ἄν τις . . . . καὶ πότερον οὐκ ἐνοῦσαι αἱ ἕξεις* [the *γνῶσις* of the *ἀρχαὶ*] *ἐγγίνονται ἢ ἐνοῦσαι λελήθασιν. εἰ μὲν δὴ ἔχομεν αὐτὰς, ἄτοπον· συμβαίνει γὰρ ἀκριβεστέρας ἔχοντας γνώσεις ἀποδείξεως λανθάνειν. εἰ δὲ λαμβάνομεν μὴ ἔχοντες πρότερον, πῶς ἂν γνωρίζοιμεν καὶ μανθάνοιμεν ἐκ μὴ προϋπαρχούσης γνώσεως· ἀδύνατον γὰρ . . . φανερὸν τοίνυν, ὅτι οὔτ' ἔχειν οἷόν τε, οὔτ' ἀγνοοῦσι καὶ μηδεμίαν ἔχουσιν ἕξιν ἐγγίνεσθαι.*

[2] Cf. the section as to the relation of soul and body, *infra*, ch. x. *init.*

[3] *Anal. Post. loc. cit.*, and *Metaph.* i. 9, 992, b, 33.

[4] *Top.* ii. 7, 113, a, 25: if ideas were in us they would have also to move with us, &c. Still Aristotle himself would scarcely have laid much stress on this merely dialectical line of attack.

is to be regarded, not as a passive reception of things given, but rather as an activity for which such reception is the occasion,[1] then the same must *à fortiori* be true of Thought,[2] which has no outward object at all. Because our pure thought is not different from the things thought,[3] therefore there lies in its nature as such the possibility of knowing with an immediate knowledge those highest principles, which are presupposed by all derivative and mediate knowledge as its condition and starting-point.[4] So far, then, the soul may be de-

[1] *De An.* ii. 5, 417, b, 2 sqq. Aristotle here says that neither consciousness nor thought ought to be called a πάσχειν and an ἀλλοίωσις, unless we distinguish two kinds of suffering and change: τήν τε ἐπὶ τὰς στερητικὰς διαθέσεις μεταβολὴν καὶ τὴν ἐπὶ τὰς ἕξεις καὶ τὴν φύσιν. Similarly in iii. 5, 429, b, 22 sqq., iii. 7, 431, a, 5.

[2] *De An.* ii. 417, b, 18: καὶ τὸ κατ' ἐνέργειαν [αἰσθάνεσθαι] δὲ ὁμοίως λέγεται τῷ θεωρεῖν· διαφέρει δὲ, ὅτι τοῦ μὲν τὰ ποιητικὰ τῆς ἐνεργείας ἔξωθεν, τὸ ὁρατόν etc. αἴτιον δ' ὅτι τῶν καθ' ἕκαστον ἡ κατ' ἐνέργειαν αἴσθησις, ἡ δ' ἐπιστήμη τῶν καθόλου· ταῦτα δ' ἐν αὐτῇ πώς ἐστι τῇ ψυχῇ. διὸ νοῆσαι μὲν ἐπ' αὐτῷ ὅταν βούληται, αἰσθάνεσθαι δ' οὐκ ἐπ' αὐτῷ· ἀναγκαῖον γὰρ ὑπάρχειν τὸ αἰσθητόν.

[3] *De An.* iii. at 430, a, 2 (following the passage to be cited presently on p. 199, n. 2), he says: 192, 3: καὶ αὐτὸς δὲ [ὁ νοῦς] νοητός ἐστιν ὥσπερ τὰ νοητά. ἐπὶ μὲν γὰρ τῶν ἄνευ ὕλης τὸ αὐτό ἐστι τὸ νοοῦν καὶ τὸ νοούμενον· ἡ γὰρ ἐπιστήμη ἡ θεωρητικὴ καὶ τὸ οὕτως ἐπιστητὸν τὸ αὐτό ἐστιν. *Ibid.* iii. 7 *init.*: τὸ δ' αὐτό ἐστιν ἡ κατ' ἐνέργειαν ἐπιστήμη τῷ πράγματι. *Metaph.* xii. 7, 1074, b, 38: ἢ ἐπ' ἐνίων ἡ ἐπιστήμη τὸ πρᾶγμα; ἐπὶ μὲν τῶν ποιητικῶν ἄνευ ὕλης ἡ οὐσία καὶ τὸ τί ἦν εἶναι, ἐπὶ δὲ τῶν θεωρητικῶν ὁ λόγος τὸ πρᾶγμα καὶ ἡ νόησις.

[4] *Anal. Post.* ii. 19, 100, b, 8: ἐπεὶ δὲ . . . . οὐδὲν ἐπιστήμης ἀκριβέστερον ἄλλο γένος ἢ νοῦς, αἱ δ' ἀρχαὶ τῶν ἀποδείξεων γνωριμώτεραι, ἐπιστήμη δ' ἅπασα μετὰ λόγου ἐστὶ, τῶν ἀρχῶν ἐπιστήμη μὲν οὐκ ἂν εἴη, ἐπεὶ δ' οὐδὲν ἀληθέστερον ἐνδέχεται εἶναι ἐπιστήμης ἢ νοῦν, νοῦς ἂν εἴη τῶν ἀρχῶν . . . εἰ οὖν μηδὲν ἄλλο παρ' ἐπιστήμην γένος ἔχομεν ἀληθὲς, νοῦς ἂν εἴη ἐπιστήμης ἀρχή. *Eth.* vi. 6: τῆς ἀρχῆς τοῦ ἐπιστητοῦ οὔτ' ἂν ἐπιστήμη εἴη οὔτε τέχνη οὔτε φρόνησις . . . . λείπεται νοῦν εἶναι τῶν ἀρχῶν. c. 7, 1141, a, 17, b, 2, c. 9, 1142, a, 25: ὁ μὲν γὰρ νοῦς τῶν ὅρων, ὧν οὐκ ἔστι λόγος. c. 12, 1143, a, 35 (with which cf. TRENDELENBURG, *Histor. Beitr.* ii. 375 sqq.; WALTER, *Die Lehre v. d. prakt. Vernunft*, etc., 38 sqq.): ὁ νοῦς τῶν ἐσχάτων ἐπ' ἀμφότερα· καὶ γὰρ τῶν πρώτων ὅρων καὶ τῶν ἐσχάτων νοῦς ἐστι καὶ οὐ λόγος, καὶ ὁ μὲν κατὰ τὰς ἀποδείξεις τῶν ἀκινήτων ὅρων καὶ πρώτων, ὁ δ' ἐν ταῖς πρακτικαῖς τοῦ ἐσχάτου καὶ ἐνδεχομένου etc. (More will be

scribed as the 'place of the Ideas,'[1] and it may be said of the faculty of Thought that it *is* in itself all that is

said as to the latter, in ch. xi. and xii. *infra.*) This recognition of principles is an immediate knowledge (ἄμεσον), for the root principles of all argument cannot, in their turn, be proved: (cf. *Anal. Post.* i. 2, 3, 72, a, 7, b, 18 sqq. c, 22, 84, a, 30; ii. 9 *init.* c. 10, 94, a, 9; and *Metaph.* iv. 4, 1006, a, 6, 1011, a, 13; more fully later). But on this very account it is always true. For error only consists in a false conjunction of perceptions, and hence arises only in the Proposition by reason of the conjunction of the Predicate with a Subject (*Categ.* 4 *fin.*; *De Interpr.* i. 16, a, 12; *De An.* iii. 8, 432, a, 11); immediate knowledge, on the other hand, is concerned with pure conceptions relating to no subject distinct from themselves, which we can only know or not know, but as to which we cannot be deceived; *De An.* iii. 6 *init.*: ἡ μὲν οὖν τῶν ἀδιαιρέτων νόησις ἐν τούτοις περὶ ἃ οὐκ ἔστι τὸ ψεῦδος· ἐν οἷς δὲ καὶ τὸ ψεῦδος καὶ τὸ ἀληθὲς, σύνθεσίς τις ἤδη νοημάτων ὥς ἓν ὄντων; and *ibid.* at the end: ἔστι δ' ἡ μὲν φάσις τὶ κατά τινος, ὥσπερ ἡ κατάφασις, καὶ ἀληθὴς ἢ ψευδὴς πᾶσα· ὁ δὲ νοῦς οὐ πᾶς, ἀλλ' ὁ τοῦ τί ἐστι κατὰ τὸ τί ἦν εἶναι ἀληθὴς, καὶ οὐ τὶ κατά τινος· ἀλλ' ὥσπερ τὸ ὁρᾶν τοῦ ἰδίου ἀληθὲς, εἰ δ' ὁ ἄνθρωπος τὸ λευκὸν ἢ μὴ, οὐκ ἀληθὲς ἀεὶ, οὕτως ἔχει ὅσα ἄνευ ὕλης. *Metaph.* ix. 10: ἐπεὶ δὲ ... τὸ ... ἀληθὲς ἢ ψεῦδος ... ἐπὶ τῶν πραγμάτων ἐστὶ τῷ συγκεῖσθαι ἢ διῃρῆσθαι ... πότ' ἐστὶν ἢ οὐκ ἔστι τὸ ἀληθὲς λεγόμενον ἢ ψεῦδος .... περὶ δὲ δὴ τὰ ἀσύνθετα τί τὸ εἶναι ἢ μὴ εἶναι καὶ τὸ ἀληθὲς καὶ τὸ ψεῦδος; . . . ἢ ὥσπερ οὐδὲ τὸ ἀληθὲς ἐπὶ τούτων τὸ αὐτὸ, οὕτως οὐδὲ τὸ εἶναι, ἀλλ' ἔστι τὸ μὲν ἀληθὲς τὸ δὲ ψεῦδος, τὸ μὲν θιγεῖν καὶ φάναι ἀληθὲς ... τὸ δ' ἀγνοεῖν μὴ θιγγάνειν· ἀπατηθῆναι γὰρ περὶ τὸ τί ἐστιν οὐκ ἔστιν ἀλλ' ἢ κατὰ συλβεβηκός ... ὅσα δή ἐστιν ὅπερ εἶναί τι καὶ ἐνεργείᾳ, περὶ ταῦτα οὐκ ἔστιν ἀπατηθῆναι ἀλλ' ἢ νοεῖν ἢ μή ... τὸ δὲ ἀληθὲς τὸ νοεῖν αὐτά· τὸ δὲ ψεῦδος οὐκ ἔστιν, οὐδ' ἀπάτη, ἀλλ' ἄγνοια. According to these passages we should understand by the προτάσεις ἄμεσοι, which express the ultimate principles (*An. Post.* i. 2, 23, 33, 72, a, 7, 84, b, 39, 88, b, 36), only those propositions in which the predicate is already contained in the subject, not those in which it attaches to a subject different from itself: or in other words, only analytical *a priori* judgments. In like manner the ὁρισμὸς τῶν ἀμέσων (*ibid.* ii. 10, 94, a, 9) is a θέσις τοῦ τί ἐστιν ἀναπόδεικτος, in which nothing is affirmed as to the existence or non-existence of a conception, nor of its connection with a stated subject. Lastly, when the principle of contradiction (in *Metaph.* iv. 3 sq. 1005, b, 11, 1006, a, 3) is designated as the βεβαιοτάτη ἀρχὴ πασῶν περὶ ἣν διαψευσθῆναι ἀδύνατον, here also only the fundamental principle of all analytical judgments is in question—the formal identity of every conception with itself.

[1] *De An.* iii. 4, 429, a, 27: καὶ εὖ δὴ οἱ λέγοντες τὴν ψυχὴν εἶναι τόπον εἰδῶν (see on this ZELLER'S *Plato*), πλὴν ὅτι οὔτε ὅλη ἀλλ'

thinkable.[1] This contained knowledge, however, can only become actual knowledge in the active exercise of cognition. It follows, therefore, that, prior to experience, it cannot be in the soul except in the way of a possibility and a basis; and so, according to him, it is, in virtue of the fact that the soul has the faculty of forming its notions out of itself by its own inherent activity.[2]

ἡ νοητική, οὔτε ἐντελεχείᾳ ἀλλὰ δυνάμει τὰ εἴδη.

[1] *De An.* iii. 8 *init.*: νῦν δὲ περὶ ψυχῆς τὰ λεχθέντα συγκεφαλαιώσαντες εἴπωμεν πάλιν ὅτι ἡ ψυχὴ τὰ ὄντα πώς ἐστι πάντα. ἢ γὰρ αἰσθητὰ τὰ ὄντα ἢ νοητά, ἔστι δ' ἡ ἐπιστήμη μὲν τὰ ἐπιστητά πως, ἡ δ' αἴσθησις τὰ αἰσθητά. (Cf. ii. 5 *fin.* iii. 7 *init.*)

[2] *De An.* iii. 4, 429, a, 15: ἀπαθὲς ἄρα δεῖ εἶναι [before the Nous experiences the effect of the νοητὸν, it must be without πάθος; cf. BONITZ, *Ind. Ar.* 72, a, 36 sqq.], δεκτικὸν δὲ τοῦ εἴδους καὶ δυνάμει τοιοῦτον [sc. οἷον τὸ εἶδος] ἀλλὰ μὴ τοῦτο, καὶ ὁμοίως ἔχειν, ὥσπερ τὸ αἰσθητικὸν πρὸς τὰ αἰσθητά, οὕτω τὸν νοῦν πρὸς τὰ νοητά . . . ὁ ἄρα καλούμενος τῆς ψυχῆς νοῦς . . . οὐθέν ἐστιν ἐνεργείᾳ τῶν ὄντων πρὶν νοεῖν . . . καὶ εὖ δὴ etc. (*vid. supr.* p. 198, n. 1). *Ibid.* b, 30: δυνάμει πώς ἐστι τὰ νοητὰ ὁ νοῦς, ἀλλ' ἐντελεχείᾳ οὐδέν, πρὶν ἂν νοῇ. δεῖ δ' οὕτως ὥσπερ ἐν γραμματείῳ ᾧ μηθὲν ὑπάρχει ἐντελεχείᾳ γεγραμμένον. ὅπερ συμβαίνει ἐπὶ τοῦ νοῦ. Here (b, 5) and in ii. 5, 417, a, 21 sqq. a still more accurate distinction is made between two meanings of the δυνάμει: we can call a man δυνάμει ἐπιστήμων not only when he has as yet learned nothing, but possesses the capacity for learning something, but also when he knows something, but has not at a given moment this knowledge actually present to his mind. It was in the latter sense that Plato conceived of innate knowledge, whereas Aristotle conceived of it under the former analogy. This is the meaning of his comparison of the soul with the book that is not yet written on: and it was a misapprehension when this comparison was understood in the sense of the later Sensation-theory of knowledge. (Cf. HEGEL, *Gesch. d. Phil.* ii. 342 sq.; TRENDELENBURG, on this passage, p. 485 sq.) Aristotle only wants to illustrate by it the difference between the δυνάμει and ἐνεργείᾳ. He does not here go on to inform us in what way potential knowledge becomes actual. But, according to what has gone before (429, a, 15), it is not the αἰσθητὰ but the νοητὰ by whose action the tablet of the νοῦς, blank in itself, is written upon, so that we have to deal in fact with a theory far removed from the Sensation-philosophy.

Throughout his whole treatment of this question, there runs a certain obscurity, the grounds of which we can of course indicate, but which we cannot altogether remove without doing violence to the statements of the Master himself. On the one hand, Aristotle contests the possibility of *any* innate knowledge, and insists that all our notions arise out of perception.[1] On the other hand, he speaks of an immediate knowledge of those truths on which all others depend,[2] and allows that all the knowledge which in the course of our lives we gain lay in our soul from the beginning in germ.[3] Of course, this last view is not to be taken to imply that the soul, prior to all experience, carried in itself the said knowledge in so far as the content thereof is concerned, or that the function of such experience was merely to cause it to be brought out into consciousness.[4]

[1] Cf. pp. 195 sq., 205 sq.

[2] P. 197, n. 4.

[3] Cf. pp. 196, n. 1, 197, n. 2, 198, n. 1, and 199, n. 1.

[4] There is no necessity to interpret in that sense the passages given above. On the contrary, when he says in *De An.* iii. 8 (*supra*, p. 199, n. 1) that 'the soul is in a certain sense everything,' he immediately explains this phrase by adding (431, b, 28): ἀνάγκη δ' ἢ αὐτὰ ἢ τὰ εἴδη εἶναι. αὐτὰ μὲν γὰρ δὴ οὔ· οὐ γὰρ ὁ λίθος ἐν τῇ ψυχῇ, ἀλλὰ τὸ εἶδος· ὥστε ἡ ψυχὴ ὥσπερ ἡ χείρ ἐστιν· καὶ γὰρ ἡ χεὶρ ὄργανόν ἐστιν ὀργάνων, καὶ ὁ νοῦς εἶδος εἰδῶν καὶ ἡ αἴσθησις εἶδος αἰσθητῶν. Since the hand indeed forms and uses the tools, but still can only form them from some given material, this comparison does not carry us further than the thought that the soul is everything inasmuch as it is capable of having the forms (or images) of all things within itself. That it produces them out of itself is not stated. On the contrary, as the power of perception is called εἶδος αἰσθητῶν, because it *receives* into itself the forms of the αἰσθητά, so the νοῦς may, in the same sense, be called εἶδος εἰδῶν, inasmuch as it is the faculty to *receive* the insensible forms; and τόπος εἰδῶν (p. 198, n. 1) may be taken in the same sense. The statement that 'universals are in the soul itself' (in *De An.* ii. 5, cited at p. 197, n. 2), occurs in a passage which has no reference to the growth of knowledge in itself, but where Aristotle is endeavouring to illustrate the progress from the power of perception to

For this would take us back again to the theory of innate ideas which Aristotle so decidedly rejects.[1] It would be equally wrong, however, to make him a pure Empiricist, and attribute to him the view that the Universal, 'without any limitation, comes to the soul from the external world.'[2] If this were his view, he could not possibly have derived the highest concepts of all—the *principia* of all knowledge—from that faculty of immediate cognition by which the *Nous* is, according to him, distinguished from all other forms of thinking activity.[3] For it is plain that concepts which we can only come at by an ascent from individuals to universals, cannot be the data of any immediate kind of knowledge, but must be data of that kind of knowledge which is the most entirely mediate of all. Our cognitive faculties, he asserts, do, in fact, take this way to arrive at these *principia*; but he cannot have regarded the thoughts in which these *principia* come for us into consciousness as the mere precipitate of a progressively refined experience, or the act by which we present them to ourselves as only the last of these successive gene-

actual perception by the relation of ἐπιστήμη to the θεωρεῖν (p. 417, b, 5: θεωροῦν γὰρ γίγνεται τὸ ἔχον τὴν ἐπιστήμην). Finally, in *Anal. Post.* ii. 19 (cited at p. 197, n. 4, *supra*) Aristotle says it is impossible to believe that we should come to the knowledge of the highest principles, without possessing previous knowledge; but he looks for that previous knowledge not in any ideas innate in the soul prior to all experience, but simply in the inductive process. Cf. *infra*, ch. v. *ad fin.*

[1] As KAMPE (*Erkenntnisstheorie d. Arist.* p. 192) objects, not without reason, though his citation of *Metaph.* i. 9, 993, a, 7 sqq. is not in point.

[2] So KAMPE, *ibid.*; but it is hard to reconcile with this exposition his attempt in the next following pages to reduce that true perception which is, for Aristotle, the basis of all knowledge to some kind of Intuitive Thought, essentially differing both from Knowledge and Opinion.

[3] On this see p. 197, n. 4, *supra*.

ralisations upon a matter given in experience. Each of these generalisations consists in an induction,[1] the result of which can only be expressed as a judgment and a conclusion, and which therefore is, like all judgments, either false or true. But, on the other hand, the activity of the *Nous* in knowledge is by him distinguished from all mediate cognition, and what we attain by it is not judgments but ideas—not that which may be either false or true, but that which is always true—that which we may either have or not have, but as to which, if we have it, we cannot be deceived.[2] So, again, as all induction starts from perception, which has relation to that which is compounded of Form and Matter and is sensible, and as the quality of contingency, the possibility of being and not-being, is inseparable from all that is Matter,[3] therefore by induction alone we can never attain to anything which is unconditionally necessary. For those ideas which rest entirely on experience can have no higher certainty than that on which they rest. But of the knowledge of the *principia*, Aristotle holds that it is of all knowledge the most certain,[4] and he will allow nothing to rank among the *principia* except what is necessarily true.[5] It follows, then, that the immediate knowledge referred to can only be an intuition—and that it can only be a spiritual intuition, as contrasted with all sensible perception. But the spirit of man has not these ideas innate in itself. Therefore, the intuition by

[1] About which see ch. v. *infra*.

[2] Cf. p. 197, n. 4.

[3] Cf. *infra* in the second part of ch. vii., and the notes there on these points.

[4] *Anal. Post.* i. 2, 71, b, 19, 72, a, 25 sqq.; ii. 19, 100, b, 9.

[5] *Anal. Post.* i. 6 *init.*

which it finds them cannot consist in any self-intuition or act of introspection, making us conscious of the *principia* as of a truth already within us.[1] It must be something whereby certain thoughts and ideas arise through an action of that which is thought upon the spirit thinking it, in some way analogous to that in which perception arises through an action of that which is perceived upon the percipient. And Aristotle does, in fact, base himself on this very analogy when he says that the *Nous* is related to the thinkable as sense is to the perceivable;[2] or that it knows the thinkable because it 'touches' it;[3] or that as perception in itself must be always true, so must thought be, in so far as it relates to ideas as such.[4]

In this way we get a theory which is for the moment intelligible and consistent. But the further questions remain wholly unanswered—What *is* this, by the intuition of which we get the *principia* of all mediate knowledge and the most universal of all ideas and axioms? What kind of being belongs to it? In what way does it act upon our spirit? Of what sort are these *principia* which we so attain? Do all of

[1] This was Zeller's view in his second edition.

[2] *De An.* iii. 4, 429, a, 15; see p. .

[3] *Metaph.* ix. 10, 1051, b, 24 (*vid. supr.* p. 197, n. 4): in perception of the *ἀσύνθετα* is *τὸ μὲν θιγεῖν καὶ φάναι ἀληθές . . . τὸ δ' ἀγνοεῖν μὴ θιγγάνειν*; xii. 7, 1072, b, 20: *αὑτὸν δὲ νοεῖ ὁ νοῦς* [the divine *νοῦς*] *κατὰ μετάληψιν τοῦ νοητοῦ* [by taking itself as a *νοητόν*]· *νοητὸς γὰρ γίγνεται θιγγάνων καὶ νοῶν*. Remembering, doubtless, the first of these passages, Theophrastus also says in *Fr.* 12 (*Metaph.*) 25: 'If we begin with observation we can, up to a certain point, explain things from their causes: *ὅταν δὲ ἐπ' αὐτὰ τὰ ἄκρα μεταβαίνωμεν οὐκέτι δυνάμεθα*, either because these have no causes, or because our eye cannot see in a full light, *τάχα δ' ἐκεῖνο ἀληθέστερον ὡς αὐτῷ τῷ νῷ ἡ θεωρία θιγόντι καὶ οἷον ἀψαμένῳ*.'

[4] *De An.* iii. 6 *fin.*; cited *supr.* p. 197, n. 4.

them merely express the formal laws of thought (as does the law of contradiction), or are there also metaphysical ideas which are so given, such as the ideas of Being, of Cause, of God? This might prove to be a natural conclusion from the theory of Aristotle; but it would take us very near to the Platonic teaching as to the intuition of the Ideas, except that, since for Aristotle the 'Forms' of things could not belong to another world, the intuition of them would necessarily be transferred also from the future to the present.

The final explanation of Aristotle's want of clearness on this subject is, however, to be found in the fact that he *had* only half emancipated himself, as we shall see, from Plato's tendency to hypostatise ideas. The 'Forms' had for him, as the 'Ideas' had for Plato, a metaphysical existence of their own, as conditioning all individual things. And keenly as he followed the growth of ideas out of experience, it is none the less true that these ideas, especially at the point where they are farthest removed from experience and immediate perception, are metamorphosed in the end from a logical product of human thought into an immediate presentment of a supersensible world, and the object, in that sense, of an intellectual intuition.

Plato conceived that the picture of the Ideas which slumbers within us could only awake to any sensible intuition by an actual recollection, and that the spiritual eye could only accustom itself to receive the light of the Ideas by a long course of preparation. So with Aristotle is it self-evident that at the beginning of our spiritual development we are at the

farthest possible distance from that knowledge which is its goal; and that consequently our ascent to knowledge can only come by a gradual approximation to that goal, through a progressive deepening of our comprehension, advancing from particulars to universals, from phenomena to the essence, from effects to causes. Knowledge, which we neither possess as a perfect gift of nature nor derive as a consequence from something higher than itself, must issue out of that which is lower: that is, out of Perception.[1] The development in time of our ideas is therefore exactly the inverse of their logical order. That which is absolutely first is relatively to us last; and whereas by virtue of its nature the universal has greater certainty than the particular, and the principle than the deductions which depend upon it, yet individuals and things of sense have more of certainty for us.[2] And in like manner we find

[1] *Anal. Post.* ii. 19, 100, a, 10: οὔτε δὴ ἐνυπάρχουσιν ἀφωρισμέναι αἱ ἕξεις (*vid. supr.* 196, n. 1), οὔτ' ἀπ' ἄλλων ἕξεων γίνονται γνωστικωτέρων, ἀλλ' ἀπὸ αἰσθήσεως.

[2] *Anal. Post.* i. 2, 71, b, 33: πρότερα δ' ἐστὶ καὶ γνωριμώτερα διχῶς· οὐ γὰρ ταὐτὸν πρότερον τῇ φύσει καὶ πρὸς ἡμᾶς πρότερον οὐδὲ γνωριμώτερον καὶ ἡμῖν γνωριμώτερον· λέγω δὲ πρὸς ἡμᾶς μὲν πρότερα καὶ γνωριμώτερα τὰ ἐγγύτερον τῆς αἰσθήσεως, ἁπλῶς δὲ πρότερα καὶ γνωριμώτερα τὰ πορρώτερον· ἔστι δὲ πορρωτάτω μὲν τὰ καθόλου μάλιστα, ἐγγυτάτω δὲ τὰ καθ' ἕκαστα. *Phys.* i. 1, 184, a, 16: πέφυκε δὲ ἐκ τῶν γνωριμωτέρων ἡμῖν ἡ ὁδὸς καὶ σαφεστέρων ἐπὶ τὰ σαφέστερα τῇ φύσει καὶ γνωριμώτερα· οὐ γὰρ ταὐτὰ ἡμῖν τε γνώριμα καὶ ἁπλῶς; i. 5 *fin.* Cf. *Metaph.* i. 2, 982, a, 23; v. 11, 1018, b, 29 sqq.; vii. 4, 1029, b, 4 sqq.; ix. 8, 1050, a, 4; *Top.* vi. 4, 141, b, 3, 22; *De An.* ii. 2 *init.*, iii. 7, *init.*; *Eth.* i. 2, 1095, b, 2. (Still more forcibly, referring rather, however, to PLATO, *Rep.* vii. *init.* than to Aristotle, is it expressed in *Metaph.* ii. 1, 993, b, 9.) The apparent contradiction in *Phys.* i. 1: ἔστι δ' ἡμῖν πρῶτον δῆλα καὶ σαφῆ τὰ συγκεχυμένα μᾶλλον· ὕστερον δ' ἐκ τούτων γίνεται γνώριμα τὰ στοιχεῖα καὶ αἱ ἀρχαὶ διαιροῦσι ταῦτα. διὸ ἐκ τῶν καθόλου ἐπὶ τὰ καθ' ἕκαστα δεῖ προϊέναι. τὸ γὰρ ὅλον κατὰ τὴν αἴσθησιν γνωριμώτερον, τὸ δὲ καθόλου ὅλον τί ἐστιν· πολλὰ γὰρ περιλαμβάνει ὡς μέρη τὸ καθόλου, is only a verbal ambiguity. For (as

that the kind of proof which proceeds from the particular is to us more clear than a deduction from the general.[1]

The way in which actual knowledge is evolved from the rudimentary possibilities of knowledge is this. The first stage is always, as we have remarked, sensible perception. Without this we can have no actual thought.[2] The man who is deprived of one of the organs of sense must of necessity also lack all the corresponding knowledge, for the general axioms of every kind of science can only be discovered by induction, and induction rests upon perception.[3] Now particular things are the proper objects of perception;[4] but inasmuch as a universal, although it may be as yet undistinguished, is contained in every particular, therefore perception is also conversant mediately with universals.[5] Or, to speak more accurately, what the senses perceive is, not the individual substance of the particular as such, but rather certain of its properties. These again are related to the particular substance after the manner of a universal, for they are not a 'this' (*τόδε*) but a 'such'

TRENDELENBURG on *Arist. De An.* p. 338, and RITTER, iii. 105, etc. remark) it is not the *logical*, but the *sensible* universal which is here dealt with—the as yet indefinite presentation of an object, as when, for instance, we represent to ourselves a body as such, before we clearly distinguish its constituent parts. In themselves, however, the simple elements are always prior to that which is made up of them; *De Cælo*, ii. 3, 286, b, 16; *Metaph.* xiii. 2, 1076, b, 18, c. 3, 1078, a, 9.

[1] *Anal. Pr.* ii. 23 *fin.*: *φύσει μὲν οὖν πρότερος καὶ γνωριμώτερος ὁ διὰ τοῦ μέσου συλλογισμὸς, ἡμῖν δ' ἐναργέστερος ὁ διὰ τῆς ἐπαγωγῆς.*

[2] *De An.* iii. 8, 432, a, 4 (*vid. supr.* p. 195, n. 1). *De Sensu*, c. 6, 445, b, 16: *οὐδὲ νοεῖ ὁ νοῦς τὰ ἐκτὸς μὴ μετ' αἰσθήσεως ὄντα.*

[3] *An. Post.* i. 18.

[4] *An. Post.* i. 18, 81, b, 6: *τῶν καθ' ἕκαστον ἡ αἴσθησις.* The same idea recurs frequently, *e.g. An. Post.* i. 2 (*vid. supr.* p. 205, n. 2), c. 31 (*vide* p. 207, n. 1), *Phys.* i. 5 *fin.*, *De An.* iii. 5, 417, b, 22, 27, *Metaph.* i. 1, 981, a, 15.

[5] *De An.* iii. 8, as at p. 195, n. 1.

(τοιόνδε); and although in perception they never come under our intuition in the form of a universal, but always as belonging to this or that thing, and in a definite individual instance, yet still they are virtually universals, and out of our perception of them the thought of the universal can be developed.[1] Now the way in which it is developed is this. In sensible perception itself the several sensible properties, and therefore also the relative universals, which inhere in the individual substance, are discriminated.[2] Out of such perception is next developed by the help of memory a general

[1] *An. Post.* i. 31, *init.*: οὐδὲ δι' αἰσθήσεως ἔστιν ἐπίστασθαι. εἰ γὰρ καὶ ἔστιν ἡ αἴσθησις τοῦ τοιοῦδε καὶ μὴ τοῦδέ τινος [only the τόδε, however, is an individual substance: οὐδὲν σημαίνει τῶν κοινῇ κατηγορουμένων τόδε τι ἀλλὰ τοιόνδε; *Metaph.* vii. 13, 1039, a, 1: of which more *infra*], ἀλλ' αἰσθάνεσθαί γε ἀναγκαῖον τόδε τι καὶ ποῦ καὶ νῦν. τὸ δὲ καθόλου καὶ ἐπὶ πᾶσιν ἀδύνατον αἰσθάνεσθαι. οὐ γὰρ τόδε οὐδὲ νῦν. οὐ γὰρ ἂν ἦν καθόλου . . . ἐπεὶ οὖν αἱ μὲν ἀποδείξεις καθόλου, ταῦτα δ' οὐκ ἔστιν αἰσθάνεσθαι, φανερὸν ὅτι οὐδ' ἐπίστασθαι δι' αἰσθήσεως ἔστιν. So in ii. 19, 100, a, 17: αἰσθάνεται μὲν τὸ καθ' ἕκαστον, ἡ δ' αἴσθησις τοῦ καθόλου ἐστὶν, οἷον ἀνθρώπου, ἀλλ' οὐ Καλλία ἀνθρώπου: *i. e.* Perception, has, it is true, a definite individual Kallias for its immediate object; but what it gives us is the image of a man with these definite properties, and the circumstance of this man's being Kallias has no influence upon the content of our perception. Cf. further *De An.* ii. 12, 424, a, 21 sqq.; and *Phys.* i. 5, 189, a, 5. What is said in the text will establish the agreement of these passages with the general doctrine of Aristotle, about which HEIDER (*Vergl. d. Aristotel. und Hegel'schen Dialektik*, i. 160, sqq.) makes too much difficulty. Nor does *Metaph.* xiii. 10, 1087, a, 15 sqq. contradict it, as KAMPE believes (*Erkenntnissth. d. Ar.* 85). It is there said that knowledge as δύναμις is τοῦ καθόλου καὶ ἀορίστου, ἡ δ' ἐνέργεια ὡρισμένη καὶ ὡρισμένου τόδε τι οὖσα, τοῦδέ τινος. All that this states is that the capability of knowing extends to everything that is knowable, but that every actual perception is the perception of a definite object; and whether this object is an individual or a universal conception does not enter into the question. Καθόλου here signifies 'the indefinite,' as to which cf. xii. 4, 1070, a, 32; *Gen. An.* ii. 8, 748, a, 7; *Eth.* ii. 7, 1107, a, 29.

[2] *De An.* iii. 2, 426, b, 8 sqq. Hence the αἴσθησις in *An. Post.* ii. 19, 99, b, 35, cf. *De An.* iii. 3, 428, a, 4, c. 9 *init.*, is called a δύναμις σύμφυτος κριτική.

representation, for that which has steadily recurred in several perceptions is fixed and retained by the mind. Thus arise in the first place experience, and next, when several experiences have condensed into general principles, art and science [1] also, until at last we reach the most universal principles of all; and of these in like manner a scientific comprehension is only to be gained by a further methodical repetition of the same process—in other words, by induction. The result may be put thus. Plato sought to get at the Idea by turning the mental eye *away from* the phenomenal world, on which, in his view, the most that was to be seen was a reflection of the idea and not the idea itself. Aristotle's theory of the ascent to knowledge rests it, on the contrary, rather upon a striving after the universal element *in* appearances as such. In other words, while both demand abstraction from the immediate data and reflection on the underlying universal, still the relation between the two elements is quite different. To Plato the abstraction from the given

[1] *Anal. Post.* ii. 19, 100, a, 2: ἐκ μὲν οὖν αἰσθήσεως γίνεται μνήμη, ὥσπερ λέγομεν, ἐκ δὲ μνήμης πολλάκις τοῦ αὐτοῦ γινομένης ἐμπειρία. αἱ γὰρ πολλαὶ μνῆμαι τῷ ἀριθμῷ ἐμπειρία μία ἐστίν. ἐκ δ' ἐμπειρίας ἢ ἐκ παντὸς ἠρεμήσαντος τοῦ καθόλου ἐν τῇ ψυχῇ, τοῦ ἑνὸς παρὰ τὰ πολλά, ὃ ἂν ἐν ἅπασιν ἓν ἐνῇ ἐκείνοις τὸ αὐτό, τέχνης ἀρχὴ καὶ ἐπιστήμης, ἐὰν μὲν περὶ γένεσιν, τέχνης, ἐὰν δὲ περὶ τὸ ὄν, ἐπιστήμης. *Metaph.* i. 1, 980, b, 28: γίγνεται δ' ἐκ τῆς μνήμης ἐμπειρία τοῖς ἀνθρώποις· αἱ γὰρ πολλαὶ μνῆμαι τοῦ αὐτοῦ πράγματος μιᾶς ἐμπειρίας δύναμιν ἀποτελοῦσιν. . . . ἀποβαίνει δ' ἐπιστήμη καὶ τέχνη διὰ τῆς ἐμπειρίας τοῖς ἀνθρώποις . . . . γίνεται δὲ τέχνη, ὅταν ἐκ πολλῶν τῆς ἐμπειρίας ἐννοημάτων μία καθόλου γένηται περὶ τῶν ὁμοίων ὑπόληψις. τὸ μὲν γὰρ ἔχειν ὑπόληψιν ὅτι Καλλίᾳ κάμνοντι τηνδὶ τὴν νόσον τοδὶ συνήνεγκε καὶ Σωκράτει καὶ καθέκαστον οὕτω πολλοῖς, ἐμπειρίας ἐστίν· τὸ δ' ὅτι πᾶσι τοῖς τοιοῖσδε κατ' εἶδος ἓν ἀφορισθεῖσι, κάμνουσι τηνδὶ τὴν νόσον, συνήνεγκεν, . . . τέχνης. In the same passages is also found more to the like purpose. In *Phys.* vii. 3, 247, b, we have, ἐκ γὰρ τῆς κατὰ μέρος ἐμπειρίας τὴν καθόλου λαμβάνομεν ἐπιστήμην.

is the first thing, and only on the presupposition of such abstraction will he recognise the possibility of coming to any knowledge of universal essence at all. To Aristotle the *direction* of the mind *upon* the common essence of the empirical data is the main point, and it is only as an inevitable consequence of this that abstraction from the particulars of sense comes in. For a like reason, Aristotle also defends the truth of the knowledge derived by sensation against the objectors; for he shows that, notwithstanding the contradictions and deceptions of the senses, a true perception is still possible, and that the actuality of what we perceive is beyond doubt, although its value is relative: in a word, that the doubts attaching to sensible perception [1] are due solely to want of caution in the use we make of it.[2] He even maintains that perception of itself never leads us astray, and that it is in our imaginations and our judgments that we are first exposed to error.[3]

[1] Cf. *Metaph.* iv. 5, 6, 1010, b, sqq., where, among other things (1010, b, 30 sqq.), it is stated that although we might say in a certain sense that without a perceiving being there would be no *αἰσθητὰ* as such, still it is impossible to say that without the *αἴσθησις* the *ὑποκείμενα ἃ ποιεῖ τὴν αἴσθησιν* could not exist—*οὐ γὰρ δὴ ἥ γ' αἴσθησις αὐτὴ ἑαυτῆς ἐστιν, ἀλλ' ἔστι τι καὶ ἕτερον παρὰ τὴν αἴσθησιν, ὃ ἀνάγκη πρότερον εἶναι τῆς αἰσθήσεως· τὸ γὰρ κινοῦν τοῦ κινουμένου πρότερόν ἐστι.* Likewise *Cat.* c. 7, 7, b, 36: *τὸ γὰρ αἰσθητὸν πρότερον τῆς αἰσθήσεως δοκεῖ εἶναι. τὸ μὲν γὰρ αἰσθητὸν ἀναιρεθὲν συναναιρεῖ τὴν αἴσθησιν, ἡ δὲ αἴσθησις τὸ αἰσθητὸν οὐ συναναιρεῖ . . . ζῴου γὰρ ἀναιρεθέντος αἴσθησις μὲν ἀναιρεῖται, αἰσθητὸν δὲ ἔσται, οἷον σῶμα, θερμὸν, γλυκὺ, πικρὸν καὶ τἆλλα ὅσα ἐστὶν αἰσθητά.*

[2] To this refer *Metaph.* iv. 5, 1010, b, 3 sqq., 14 sqq.; xi. 6, 1062, b, 13 sqq.

[3] *De An.* iii. 3. 427, b, 11: *ἡ μὲν γὰρ αἴσθησις τῶν ἰδίων ἀεὶ ἀληθὴς καὶ πᾶσιν ὑπάρχει τοῖς ζῴοις, διανοεῖσθαι δ' ἐνδέχεται καὶ ψευδῶς καὶ οὐδενὶ ὑπάρχει ᾧ μὴ καὶ λόγος.* *Ibid.* 428, a, 11: *αἱ μὲν* [the *αἰσθήσεις*] *ἀληθεῖς αἰεὶ, αἱ δὲ φαντασίαι γίνονται αἱ πλείους ψευδεῖς.* Similarly ii. 6, 418, a, 11 sqq.; and in *Metaph.* iv. 5, 1010, b, 2: *οὐδ' ἡ αἴσθησις ψευδὴς τοῦ ἰδίου ἐστὶν, ἀλλ' ἡ φαντασία οὐ ταὐτὸν τῇ αἰσθήσει.*

He shows in fact that simple-minded confidence in the truth of sensible perceptions which is natural to every uncritical consciousness. This is in his case the more easy to understand because he has as little notion as the other Greeks of making any close inquiry into the part which a subjective activity plays in the construction of our experience, and refers it simply to an operation of the objects upon us whereby they impress their images upon the soul;[1] while, on the other hand, the philosopher who attributed so high a value to observation, and the naturalist who required so wide a basis of empirical facts, could hardly be expected to take sufficient account of the attacks which some of his predecessors had made upon the trustworthiness of the senses.[2] Of course he does not seek to deny the delu-

[1] See the account of Aristotle's theory of sensation, *infra*, ch. x. *ad fin.*

[2] It has been shown at p. 209, n. 1, how Aristotle, in *Cat.* 7, treats as given objectively even those sensible properties which Democritus had already shown to be merely subjective (ZELL. *Ph. d. Gr.* i. 772, l. 783, 2). Similarly in *Phys.* viii. 3, in combating the opinion (of Parmenides), πάντα ἠρεμεῖν, he follows up the striking remark (254, a, 30) that such a view could not explain δόξα and φαντασία as movements of the soul (it would have been more exact to say 'of the changing series of mental images') with the sweeping observation that to investigate such a view is ζητεῖν λόγον ὧν βέλτιον ἔχομεν ἢ λόγου δεῖσθαι, and κακῶς κρίνειν τὸ πιστὸν καὶ τὸ μὴ πιστὸν καὶ ἀρχὴν καὶ μὴ ἀρχήν. The same objection holds, in his opinion against the theories that everything is always being moved, or that one thing is always moved and another never. πρὸς ἅπαντα γὰρ ταῦτα ἱκανὴ μία πίστις· ὁρῶμεν γὰρ ἔνια ὁτὲ μὲν κινούμενα ὁτὲ δ' ἠρεμοῦντα. *Ibid.* 253, a, 33, in opposing the doctrine πάντ' ἠρεμεῖν, he says, τούτου ζητεῖν λόγον ἀφέντας τὴν αἴσθησιν, ἀρρωστία τίς ἐστι διανοίας, and such speculations seem to him abnormal and non-natural. All such questions as how we know whether we are awake or asleep, whether we are in our sound senses, &c., Aristotle considers altogether misleading: πάντων γὰρ λόγον ἀξιοῦσιν οὗτοι εἶναι . . . λόγον γὰρ ζητοῦσιν ὧν οὐκ ἔστι λόγος· ἀποδείξεως γὰρ ἀρχὴ οὐκ ἀπόδειξίς ἐστι. (*Metaph.* iv. 6, 1011, a, 8 sqq. cf. below, p. 247, n. 2). He thinks it a self-evident proposition that we can only decide upon the sensible properties of things—as upon the good and the evil, the beautiful and the

sions of sense, but he believes that our sensations, as such, are not to blame. He holds that each sense represents to us always, or almost always, with truth the special colour, sound, etc., which it perceives, but that illusion first arises in the referring of these properties to definite objects, and in the discriminating of that which is immediately given in perception from that which is only got by abstraction therefrom.[1]

To these views, then, as to the nature or origin of knowledge, the arrangement of Aristotle's theory of scientific knowledge—his Analytics—corresponds. It is the function of Science to explain the phenomena by their principles, which must be sought for in the Universal Causes and Laws. The deduction, therefore, of the

ugly—in a normal state of the senses and the mind.

[1] In this sense Aristotle himself illustrates his principle in *De An.* iii. 3, 428, b, 18: ἡ αἴσθησις τῶν μὲν ἰδίων ἀληθής ἐστιν ἢ ὅτι ὀλίγιστον ἔχουσα τὸ ψεῦδος. δεύτερον δὲ τοῦ συμβεβηκέναι ταῦτα· καὶ ἐνταῦθα ἤδη ἐνδέχεται διαψεύδεσθαι· ὅτι μὲν γὰρ λευκόν, οὐ ψεύδεται, εἰ δε τοῦτο τὸ λευκὸν, ἢ ἄλλο τι [whether the white thing is, *e.g.*, a cloth or a wall], ψεύδεται. (So also at the end of c. 6.) τρίτον δὲ τῶν κοινῶν καὶ ἑπομένων τοῖς συμβεβηκόσιν, οἷς ὑπάρχει τὰ ἴδια· λέγω δ' οἷον κίνησις καὶ μέγεθος, ἃ συμβέβηκε τοῖς αἰσθητοῖς περὶ ἃ μάλιστα ἤδη ἔστιν ἀπατηθῆναι κατὰ τὴν αἴσθησιν. (About these κοινὰ see also *De Sensu*, c. i. 437, a, 8.) *De Sensu*, iv. 442, b, 8: περὶ μὲν τούτων [the κοινὰ just mentioned] ἀπατῶνται, περὶ δὲ τῶν ἰδίων οὐκ ἀπατῶνται, οἷον ὄψις περὶ χρώματος καὶ ἀκοὴ περὶ ψόφων. *Metaph.* iv. 5, 1010, b, 14. We can only trust the deliverance of each sense with regard to its own particular objects, those of sight with regard to colour, &c.: ὧν [αἰσθήσεων] ἑκάστη ἐν τῷ αὐτῷ χρόνῳ περὶ τὸ αὐτο οὐδέποτέ φησιν ἅμα οὕτω καὶ οὐχ οὕτως ἔχειν. ἀλλ' οὐδ' ἐν ἑτέρῳ χρόνῳ περὶ τὸ πάθος ἠμφισβήτησεν, ἀλλὰ περὶ τὸ ᾧ συμβέβηκε τὸ πάθος. The same wine may taste to us at one time sweet, at another not: ἀλλ' οὐ τό γε γλυκὺ οἷόν ἐστιν ὅταν ᾖ, οὐδεπώποτε μετέβαλεν, ἀλλ' ἀεὶ ἀληθεύει περὶ αὐτοῦ καὶ ἔστιν ἐξ ἀνάγκης τὸ ἐσόμενον γλυκὺ τοιοῦτον. Perception shows us primarily (as has been already said on pp. 206–7) only certain sets of qualities. The subjects to which these qualities belong are not immediately and exclusively determined by perception; nor are those other properties which are only inferred from what we perceive.

particular from the universal and of effects from causes, or in one word *Demonstration*, forms the task of Science: for in such deduction, according to Aristotle, consists all Proof. The premises, however, from which these deductive proofs must start cannot be themselves deduced by the same method. Nor are they immediately given in any innate kind of knowledge. It is only by working upwards from phenomena that we can reach the principles that underlie them: only from particulars that we can rise to universals. To do this scientifically is the business of *Induction*. Demonstration and Induction are accordingly the two component parts of the scientific process, and the essential subjects of Methodology. Both, however, presuppose the general elements of Thought, and cannot be explained without a knowledge of them. Aristotle, therefore, prefaces his theory of Proof with an examination of the Syllogism; and in connection with this he finds himself compelled to go more closely into the nature of the Judgment and the Proposition, as being the component parts of the Syllogism. It was not till a later period of his work (as we have already explained) that he went on to treat them separately, and even then this part of his Logic remained distinctly undeveloped. The same remark applies still more strongly to his doctrine of Concepts.[1] Nevertheless, it is with these last that we must begin, in order to proceed thereafter to the theory of judgments, and lastly to the Syllogism—inasmuch as certain definite views as to concepts are always presupposed by Aristotle in his discussion of Syllogistic Logic.

[1] Cf. pp. 192 sqq.

It was the search for general concepts which gave to philosophy under Socrates that new direction which not only Plato but also Aristotle followed in all essentials. As a natural result of this, we find that Aristotle, generally speaking, takes for granted the Socratico-Platonic theory of the nature of concepts and the problem of abstract thought.[1] But as we shall find him in his metaphysics contradicting Plato's doctrine of the independent reality of the Universal which we think in the Concept, so also in the matter of the logical handling of concepts he feels it necessary in connection with this criticism to obtain more accurate and definite conclusions on many points.[2] Plato had required that in conceptual definition attention should be restricted to the essential as opposed to the accidental properties of things;[3] and yet at the same time he had exalted all general notions to an absolute independence as Ideas, without any further distinction between conceptions of property and substance.[4] This distinction Aristotle introduces, for to him, as we shall see, the individual thing alone is Substance. But he does not merely separate the accidental from the essential.[5] He goes on

[1] Cf. pp. 162 sq. and 172 sq.

[2] For the following, besides PRANTL (*Gesch. d. Log.* i. 210 sqq.), and the other general works, cf. KUHN, *De Notionis Definitione qual. Arist. constituerit*, Halle, 1844; RASSOW, *Arist. de Notionis Definitione Doctrina*, Berl. 1843.

[3] See ZELL. *Ph. d. Gr.* pt. i. p. 518 sq.

[4] *Ibid.* 584 sqq.

[5] As to the distinction of the *συμβεβηκὸς* from the *καθ' αὑτὸ* cf. *Anal. Post.* i. 4, 73, a, 34 sqq.; *Top.* i. 5, 102, b, 4; *Metaph.* v. 7, c. 9 *init.*, c. 18, 1002, a, 24 sqq., c. 30, 1025, a, 14, 28, c. 6 *init.*; WAITZ, in *Categ.* 5, b, 16; *Anal. Post.* 71, b, 10. According to these passages everything belongs to any object '*καθ' αὑτὸ*' which is, mediately or immediately, contained in the concept of that object; and all is '*κατὰ συμβεβηκὸς*' which does not follow from the concept. To be a biped belongs to any man *καθ' αὑτὸ*,

to make a further subdivision of the latter head by distinguishing the Universal from the Genus, and both from the Concept or conceptual Essence of things.[1] A *Universal* is everything that appertains to several objects in common, not merely by accident, but by virtue of their nature.[2] If this common element is a qualification of the essence derived from some other more general, then the Universal is a property-concept, and indicates an essential property.[3] If it is of the essence of the things in question, then the Universal becomes a *Genus*.[4] If to the common distinguishing

for every man, as such, is a biped. To be educated is to him κατὰ συμβεβηκός. A συμβεβηκὸς is (*Top.* ibid.) ὃ ἐνδέχεται ὑπάρχειν ὁτῳοῦν ἑνὶ καὶ τῷ αὐτῷ καὶ μὴ ὑπάρχειν. Hence, what is said of a thing καθ' αὑτὸ is true of all things which fall under the same concept; but what is said κ. συμβεβηκὸς is only true in particular cases; and therefore all universal determinations are καθ' αὑτό. *Metaph.* v. 9, 1017, b, 35: τὰ γὰρ καθόλου καθ' αὑτὰ ὑπάρχει, τὰ δὲ συμβεβηκότα οὐ καθ' αὑτὰ ἀλλ' ἐπὶ τῶν καθ' ἕκαστα ἁπλῶς λέγεται. Cf. note 2, below. For more about the συμβεβηκὸς, see the second part of ch. vii., *infra*.

[1] Thus *Metaph.* vii. 3 *init.*: οὐσία in common usage means many different things: τὸ τί ἦν εἶναι καὶ τὸ καθόλου καὶ τὸ γένος . . . καὶ τέταρτον τούτων τὸ ὑποκείμενον.

[2] *Anal. Post.* i. 4, 73, b, 26: καθόλου δὲ λέγω ὃ ἂν κατὰ παντός τε ὑπάρχῃ καὶ καθ' αὑτὸ καὶ ᾗ αὐτό. φανερὸν ἄρα ὅτι ὅσα καθόλου ἐξ ἀνάγκης ὑπάρχει τοῖς πράγμασιν; *Part. An.* i. 4, 644, a, 24: τὰ δὲ καθόλου κοινά· τὰ γὰρ πλείοσιν ὑπάρχοντα καθόλου λέγομεν. (Likewise *Metaph.* vii. 13, 1038, b, 11.) Cf. last note but one.

[3] Such an essential quality Aristotle calls a καθ' αὑτὸ ὑπάρχον, a πάθος καθ' αὑτὸ, or a συμβεβηκὸς καθ' αὑτὸ, understanding in the last case by συμβεβηκὸς (the term being used in a sense different from that discussed above) broadly that ὃ συμβαίνει τινὶ, *i.e.* a quality; cf. *Metaph.* v. 30 *fin.* c. 7, 1017, a, 12, iii. 1, 995, b, 18, 25, c. 2, 997, a, 25 sqq. iv. 1, iv. 2, 1004, b, 5, vi. 1, 1025, b, 12, vii. 4, 1029, b, 13; *Anal. Post.* i. 22, 83, b, 11, 19, c. 4, 73, b, 5, c. 6, 75, a, 18, c. 7, 75, a, 42; *Phys.* i. 3, 186, b, 18, ii. 2, 193, b, 26, c. 3, 195, b, 13, iii. 4, 203, b, 33; *De An.* i. 1, 402, b, 16; *Rhet.* i. 2, 1355, b, 30; WAITZ, on *Anal. Post.* 71, b, 10; TRENDELENBURG, *De An.* 189 sq.; BONITZ, on *Metaph.* 1025, a.

[4] *Top.* i. 5, 102, a, 31: γένος δ' ἐστὶ τὸ κατὰ πλειόνων καὶ διαφερόντων τῷ εἴδει ἐν τῷ τί ἐστι κατηγορούμενον. ἐν τῷ τί ἐστι δὲ κατηγορεῖσθαι τὰ τοιαῦτα λεγέσθω, ὅσα ἁρμόττει ἀποδοῦναι ἐρωτηθέντα τί ἐστι τὸ προκείμενον (*e.g.* in a man: τί ἐστι; ζῷον). *Metaph.* v. 28,

qualities included in the notion of the Genus are added other marks which are again essential with reference to a certain part of the whole class, and by which such part is distinguished from the rest of the same Genus, then we arrive at the *Species*, which, accordingly, is made up of the Genus and the *specific differences*.[1] If,

1024, a, 36 sqq., where, among different meanings of *γένος*, the following are given: *τὸ ὑποκείμενον ταῖς διαφοραῖς, τὸ πρῶτον ἐνυπάρχον ὃ λέγεται ἐν τῷ τί ἐστι . . . οὗ διαφοραὶ λέγονται αἱ ποιότητες* (that these two descriptions apply to the same meaning of *γένος* is shown by Bonitz on this passage). *Ibid.* x. 3, 1054, b, 30: *λέγεται δὲ γένος ὃ ἄμφω ταὐτὸ λέγονται κατὰ τὴν οὐσίαν τὰ διάφορα*; x. 8, 1057, b, 37: *τὸ γὰρ τοιοῦτον γένος καλῶ, ᾧ ἄμφω ἓν ταὐτὸ λέγεται, μὴ κατὰ συμβεβηκὸς ἔχον διαφοράν. Top.* vii. 2, 153, a, 17: *κατηγορεῖται δ' ἐν τῷ τί ἐστι τὰ γένη καὶ αἱ διαφοραί.* Every *γένος* is consequently a *καθόλου*, but not every *καθόλου* a *γένος*; cf. *Metaph.* iii. 3, 998, b, 17, 999, a, 21, xii. 1, 1069, a, 27, &c., with i. 9, 992, b, 12, vii. 13, 1038, b, 16, 25 sq.; and BONITZ on *Metaph.* 299 sqq. To the distinction between genus and property is also partly referable the statement in *Categ.* c. 2, 1, a, 20 sqq. c. 5, that everything either (1) *καθ' ὑποκειμένου τινὸς λέγεται, ἐν ὑποκειμένῳ δὲ οὐδενί ἐστιν*, or (2) *ἐν ὑποκειμένῳ μέν ἐστι καθ' ὑποκειμένου δὲ οὐδενὸς λέγεται*, or (3) *καθ' ὑποκειμένου τε λέγεται καὶ ἐν ὑποκειμένῳ ἐστίν*, or (4) *οὔτ' ἐν ὑποκειμένῳ ἐστὶν οὔτε καθ' ὑποκειμένου λέγεται.* Of these divisions, the fourth comprises particular things: the first refers to genera and (c. 5, 3, a, 21) specific differences: the second to properties, activities and conditions—in fact, the *συμβεβηκότα*. To the first belongs the term 'man,' to the second the term 'grammar,' and to the fourth the term 'Socrates.' But the uncertainty of the whole division immediately appears in the description of the third class, for if there are notions which are predicated both *καθ' ὑποκειμένου* and *ἐν ὑποκειμένῳ*—*i.e.* which are at once genera and properties (the example Aristotle gives is the concept of 'science,' which is in the soul as its *ὑποκείμενον*, and is also predicated of each of the particular sciences)—then the genera and properties cannot be distinct and co-ordinate classes of universals. How undefined was the boundary between a 'genus' and a 'property' will be seen also in his treatment of Substance (on which see the first part of ch. vii., *infra*).

[1] *Metaph.* x. 7, 1057, b, 7: *ἐκ γὰρ τοῦ γένους καὶ τῶν διαφορῶν τὰ εἴδη* (for instance, the specific concepts 'black' and 'white' are made up of the generic notion *χρῶμα* and the distinguishing qualities *διακριτικὸς* and *συγκριτικός*: white is the *χρῶμα διακριτικόν*, black is the *χρῶμα συγκριτικόν*). *Top.* vi. 3, 140, a, 28: *δεῖ γὰρ τὸ μὲν γένος ἀπὸ τῶν ἄλλων χωρίζειν* [the generic concept distinguishes

finally, an object is in this way, by the aggregate of its distinctive marks, so defined that the definition as a whole is applicable to no other object, then we have its *Concept*.[1] The object of the Concept is therefore the

what belongs to a genus from every other], τὴν δὲ διαφορὰν ἀπό τινος ἐν τῷ αὐτῷ γένει. *Ibid.* vi. 6, 143, b, 8, 19. (Further instances of the manner of using διαφορὰ are given by WAITZ, *Arist. Org.* i. 279; BONITZ, *Ind. Ar.* 192, a, 23.)—These distinguishing marks of species, Aristotle calls διαφορὰ εἰδοποιὸς (*Top.* vi. 6, 143, b, 7; *Eth.* x. 3, 1174, b, 5). From other properties he distinguishes them by their being able to be predicated of a subject (καθ' ὑποκειμένου λέγονται), but not being in a subject (ἐν ὑποκειμένῳ οὐκ εἰσί)—*i.e.* they do not subsist in a subject which would exist before themselves, or which might be conceived independently of them, but in one which *by* them alone *is* this definite subject (*Cat.* 5, 3, a, 21 sq.; cf. c. 2, 1, a, 24 sq.); they are not accidental but essential determinations (*Metaph.* vii. 4, 1029, b, 14, 1030, a, 14; *Top.* vi. 6, 144, a, 24: οὐδεμία γὰρ διαφορὰ τῶν κατὰ συμβεβηκὸς ὑπαρχόντων ἐστί, καθάπερ οὐδὲ τὸ γένος· οὐ γαρ ἐνδέχεται τὴν διαφορὰν ὑπάρχειν τινὶ καὶ μὴ ὑπάρχειν); they belong to the concept of the subject of which they are affirmed, and hence everything that is implied in them is also true of the species and of the individuals to which they belong (*Cat.* c. 5, 3, a, 21 sqq. b, 5). It can hence be said of them, that they (together with the genus) 'form the substance' (*Metaph.* vii. 12, 1038, b, 19: cf. following note) and that they 'express something substantial' (*Top.* vii. 2, *vid. supr.* p. 214, n. 4; and yet, looked at in themselves, they are not substances but qualities, for they express not a τί, but a ποιόν τι (*Top.* iv. 2, 122, b, 16, c. 6, 128, a, 26, vi. 6, 144, a, 18, 21; *Phys.* v. 2, 226, a, 27; *Metaph.* v. 14 *init.*). The apparent contradiction between Aristotle's different statements on the subject (brought out by TRENDELENBURG, *Hist. Beitr. z. Phil.* i. 56 sqq., and BONITZ, on *Metaph.* v. 14) may be solved in the manner indicated; cf. WAITZ, *ut supra.*

[1] *Anal. Post.* ii. 13, 96, a, 24. Many properties of things are also accidental to other things which fall under the same genus. Τὰ δὴ τοιαῦτα ληπτέον [in the determination of concepts] μέχρι τούτου, ἕως τοσαῦτα ληφθῇ πρῶτον, ὧν ἕκαστον μὲν ἐπὶ πλεῖον ὑπάρξει [is accidental also to other things], ἅπαντα δὲ μὴ ἐπὶ πλέον. ταύτην γὰρ ἀνάγκη οὐσίαν εἶναι τοῦ πράγματος—which will be further illustrated below. *Ibid.* 97, a, 18: we get the concept (λόγος τῆς οὐσίας) of a given object by dividing the genus into its species, and then the species to which our object belongs into its sub-species, and thus proceeding till we arrive at a group ὧν μηκέτι ἐστὶ διαφορὰ, *i.e.* that which is indivisible into any farther sets of opposed species, to one or other of which the object in question would belong (but about the actual tenableness of this

Substance, or more accurately the determinate Substance or peculiar Essence of the things in question;[1] and the

theory, cf. BONITZ, *Arist. Metaph.* ii. 346, 1). So also *Metaph.* vii. 12, 1037, b, 29: οὐθὲν γὰρ ἕτερόν ἐστιν ἐν τῷ ὁρισμῷ, πλὴν τό τε πρῶτον λεγόμενον γένος καὶ αἱ διαφοραί (or as it stands 1038, a, 8: ὁ ὁρισμός ἐστιν ὁ ἐκ τῶν διαφορῶν λόγος). The genus is divided into its species, the latter into their sub-species, and this is continued ἕως ἂν ἔλθῃ εἰς τὰ ἀδιάφορα (*ibid.* l. 15); and since in this series every subsequent *differentia* includes the preceding one (*e.g.* the δίπουν includes the ὑπόπουν), therefore the intermediate terms which fall between the genus and the lowest specific difference do not need to be repeated in the definition (cf. also *Part. An.* i. 2 *init.*). So it follows (*Met.* ibid. 1038, a, 28): ὅτι ἡ τελευταία διαφορὰ ἡ οὐσία τοῦ πράγματος ἔσται καὶ ὁ ὁρισμός: in which, however, we have to understand by the τελευταία διαφορὰ, not only the last specific difference as such, but the specific concept as determined by it, which embraces the higher species and the genus.

[1] For the designation of that which is thought of in the concept, Aristotle makes use of various expressions. Besides οὐσία and εἶδος (of which we shall have more to say in dealing with the Metaphysics), we have to notice in this connection his way of marking out the idea which a word expresses by placing a ὅπερ before it, as: ὅπερ ὄν, or ὅπερ ἕν (*Phys.* 3, 186, a, 32 sqq.), for 'Being, as such,' or 'One, as such' (cf. BONITZ, *Ind. Arist.* 533, b, 36 sqq.); and also his special use of εἶναι with a dative annexed (for instance, τὸ ἀνθρώπῳ εἶναι, &c., τὸ ἑνὶ εἶναι τὸ ἀδιαιρέτῳ ἐστὶν εἶναι, *Metaph.* x. 1, 1052, b, 16: οὐ γάρ ἐστι τὸ σοὶ εἶναι τὸ μουσικῷ εἶναι, *ibid.* vii. 4, 1029, b, 14, cf. *Ind. Ar.* 221, a, 34); and the phrase τὸ τί ἦν εἶναι.—In the second of these expressions the dative must (according to TRENDELENBURG, *Rh. Mus.* 1828, 481; SCHWEGLER, *Ar. Metaph.* iv. 371) be taken possessively, so that ἀνθρώπῳ εἶναι is equivalent to εἶναι τοῦτο ὅ ἐστιν ἀνθρώπῳ = 'to be that which belongs to man'; and so τὸ ἀνθρώπῳ εἶναι designates the manner of being that is peculiar to man = 'Man's Being'; whereas ἄνθρωπον εἶναι only signifies the condition of one who is a man, or the actual participation in human nature. For the proof of this explanation such passages as the following will serve: τὸ εἶναι αὐτῷ ἕτερον, τὸ ζῆν τοῖς ζῶσι τὸ εἶναί ἐστιν (BONITZ, *Ind. Ar.* 221, a, 42, 54 sq., *Arist. Stud.* iv. 377). The fact that the article is never put before the dative (for Aristotle does not say τὸ τῷ ἀνθρώπῳ εἶναι) does not stand in the way; for the τῷ in this case after τὸ would be very awkward as a matter of diction; and moreover this very omission of the article makes it clearer that in the ἀνθρώπῳ εἶναι we are dealing with that 'being' which belongs to man *as such*.—The τί ἦν εἶναι is also, as a rule, construed with the dative of the object (τὸ τί ἦν εἶναι ἑκάστῳ, &c.; cf. *Ind. Ar.* 764, a, 60 sq.); for it is (as ALEX. says, in *Schol.* 256, b, 14 on *Top.* 24 m.)

representation, for that which has steadily recurred in several perceptions is fixed and retained by the mind. Thus arise in the first place experience, and next, when several experiences have condensed into general principles, art and science [1] also, until at last we reach the most universal principles of all; and of these in like manner a scientific comprehension is only to be gained by a further methodical repetition of the same process—in other words, by induction. The result may be put thus. Plato sought to get at the Idea by turning the mental eye *away from* the phenomenal world, on which, in his view, the most that was to be seen was a reflection of the idea and not the idea itself. Aristotle's theory of the ascent to knowledge rests it, on the contrary, rather upon a striving after the universal element *in* appearances as such. In other words, while both demand abstraction from the immediate data and reflection on the underlying universal, still the relation between the two elements is quite different. To Plato the abstraction from the given

[1] *Anal. Post.* ii. 19, 100, a, 2: *ἐκ μὲν οὖν αἰσθήσεως γίνεται μνήμη, ὥσπερ λέγομεν, ἐκ δὲ μνήμης πολλάκις τοῦ αὐτοῦ γινομένης ἐμπειρία. αἱ γὰρ πολλαὶ μνῆμαι τῷ ἀριθμῷ ἐμπειρία μία ἐστίν. ἐκ δ' ἐμπειρίας ἢ ἐκ παντὸς ἠρεμήσαντος τοῦ καθόλου ἐν τῇ ψυχῇ, τοῦ ἑνὸς παρὰ τὰ πολλά, ὃ ἂν ἐν ἅπασιν ἓν ἐνῇ ἐκείνοις τὸ αὐτό, τέχνης ἀρχὴ καὶ ἐπιστήμης, ἐὰν μὲν περὶ γένεσιν, τέχνης, ἐὰν δὲ περὶ τὸ ὄν, ἐπιστήμης.* *Metaph.* i. 1, 980, b, 28: *γίγνεται δ' ἐκ τῆς μνήμης ἐμπειρία τοῖς ἀνθρώποις· αἱ γὰρ πολλαὶ μνῆμαι τοῦ αὐτοῦ πράγματος μιᾶς ἐμπειρίας δύναμιν ἀποτελοῦσιν. . . . ἀποβαίνει δ' ἐπιστήμη καὶ τέχνη διὰ τῆς ἐμπειρίας τοῖς ἀνθρώποις . . . . γίνεται δὲ τέχνη, ὅταν ἐκ πολλῶν τῆς ἐμπειρίας ἐννοημάτων μία καθόλου γένηται περὶ τῶν ὁμοίων ὑπόληψις. τὸ μὲν γὰρ ἔχειν ὑπόληψιν ὅτι Καλλίᾳ κάμνοντι τηνδὶ τὴν νόσον τοδὶ συνήνεγκε καὶ Σωκράτει καὶ καθέκαστον οὕτω πολλοῖς, ἐμπειρίας ἐστίν· τὸ δ' ὅτι πᾶσι τοῖς τοιοῖσδε κατ' εἶδος ἓν ἀφορισθεῖσι, κάμνουσι τηνδὶ τὴν νόσον, συνήνεγκεν, . . . τέχνης.* In the same passages is also found more to the like purpose. In *Phys.* vii. 3, 247, b, we have, *ἐκ γὰρ τῆς κατὰ μέρος ἐμπειρίας τὴν καθόλου λαμβάνουεν ἐπιστήμην.*

is the first thing, and only on the presupposition of such abstraction will he recognise the possibility of coming to any knowledge of universal essence at all. To Aristotle the *direction* of the mind *upon* the common essence of the empirical data is the main point, and it is only as an inevitable consequence of this that abstraction from the particulars of sense comes in. For a like reason, Aristotle also defends the truth of the knowledge derived by sensation against the objectors; for he shows that, notwithstanding the contradictions and deceptions of the senses, a true perception is still possible, and that the actuality of what we perceive is beyond doubt, although its value is relative: in a word, that the doubts attaching to sensible perception [1] are due solely to want of caution in the use we make of it.[2] He even maintains that perception of itself never leads us astray, and that it is in our imaginations and our judgments that we are first exposed to error.[3]

[1] Cf. *Metaph.* iv. 5, 6, 1010, b, sqq., where, among other things (1010, b, 30 sqq.), it is stated that although we might say in a certain sense that without a perceiving being there would be no *αἰσθητὰ* as such, still it is impossible to say that without the *αἴσθησις* the *ὑποκείμενα ἃ ποιεῖ τὴν αἴσθησιν* could not exist—*οὐ γὰρ δὴ ἥ γ' αἴσθησις αὐτὴ ἑαυτῆς ἐστιν, ἀλλ' ἔστι τι καὶ ἕτερον παρὰ τὴν αἴσθησιν, ὃ ἀνάγκη πρότερον εἶναι τῆς αἰσθήσεως· τὸ γὰρ κινοῦν τοῦ κινουμένου πρότερόν ἐστι.* Likewise *Cat.* c. 7, 7, b, 36: *τὸ γὰρ αἰσθητὸν πρότερον τῆς αἰσθήσεως δοκεῖ εἶναι. τὸ μὲν γὰρ αἰσθητὸν ἀναιρεθὲν συναναιρεῖ τὴν αἴσθησιν, ἡ δὲ αἴσθησις τὸ αἰσθητὸν οὐ συναναιρεῖ . . . ζῴου γὰρ ἀναιρεθέντος αἴσθησις μὲν ἀναιρεῖται, αἰσθητὸν δὲ ἔσται, οἷον σῶμα, θερμὸν, γλυκὺ, πικρὸν καὶ τἄλλα ὅσα ἐστὶν αἰσθητά.*

[2] To this refer *Metaph.* iv. 5, 1010, b, 3 sqq., 14 sqq.; xi. 6, 1062, b, 13 sqq.

[3] *De An.* iii. 3. 427, b, 11: *ἡ μὲν γὰρ αἴσθησις τῶν ἰδίων ἀεὶ ἀληθὴς καὶ πᾶσιν ὑπάρχει τοῖς ζῴοις, διανοεῖσθαι δ' ἐνδέχεται καὶ ψευδῶς καὶ οὐδενὶ ὑπάρχει ᾧ μὴ καὶ λόγος.* *Ibid.* 428, a, 11: *αἱ μὲν* [the *αἰσθήσεις*] *ἀληθεῖς αἰεὶ, αἱ δὲ φαντασίαι γίνονται αἱ πλείους ψευδεῖς.* Similarly ii. 6, 418, a, 11 sqq.; and in *Metaph.* iv. 5, 1010, b, 2: *οὐδ' ἡ αἴσθησις ψευδὴς τοῦ ἰδίου ἐστὶν, ἀλλ' ἡ φαντασία οὐ ταὐτὸν τῇ αἰσθήσει.*

He shows in fact that simple-minded confidence in the truth of sensible perceptions which is natural to every uncritical consciousness. This is in his case the more easy to understand because he has as little notion as the other Greeks of making any close inquiry into the part which a subjective activity plays in the construction of our experience, and refers it simply to an operation of the objects upon us whereby they impress their images upon the soul;[1] while, on the other hand, the philosopher who attributed so high a value to observation, and the naturalist who required so wide a basis of empirical facts, could hardly be expected to take sufficient account of the attacks which some of his predecessors had made upon the trustworthiness of the senses.[2] Of course he does not seek to deny the delu-

[1] See the account of Aristotle's theory of sensation, *infra*, ch. x. *ad fin.*

[2] It has been shown at p. 209, n. 1, how Aristotle, in *Cat.* 7, treats as given objectively even those sensible properties which Democritus had already shown to be merely subjective (ZELL. *Ph. d. Gr.* i. 772, l. 783, 2). Similarly in *Phys.* viii. 3, in combating the opinion (of Parmenides), πάντα ἠρεμεῖν, he follows up the striking remark (254, a, 30) that such a view could not explain δόξα and φαντασία as movements of the soul (it would have been more exact to say 'of the changing series of mental images') with the sweeping observation that to investigate such a view is ζητεῖν λόγον ὧν βέλτιον ἔχομεν ἢ λόγου δεῖσθαι, and κακῶς κρίνειν τὸ πιστὸν καὶ τὸ μὴ πιστὸν καὶ ἀρχὴν καὶ μὴ ἀρχήν. The same objection holds, in his opinion against the theories that everything is always being moved, or that one thing is always moved and another never. πρὸς ἅπαντα γὰρ ταῦτα ἱκανὴ μία πίστις· ὁρῶμεν γὰρ ἔνια ὁτὲ μὲν κινούμενα ὁτὲ δ' ἠρεμοῦντα. *Ibid.* 253, a, 33, in opposing the doctrine πάντ' ἠρεμεῖν, he says, τούτου ζητεῖν λόγον ἀφέντας τὴν αἴσθησιν, ἀρρωστία τίς ἐστι διανοίας, and such speculations seem to him abnormal and non-natural. All such questions as how we know whether we are awake or asleep, whether we are in our sound senses, &c., Aristotle considers altogether misleading: πάντων γὰρ λόγον ἀξιοῦσιν οὗτοι εἶναι . . . λόγον γὰρ ζητοῦσιν ὧν οὐκ ἔστι λόγος· ἀποδείξεως γὰρ ἀρχὴ οὐκ ἀπόδειξίς ἐστι. (*Metaph.* iv. 6, 1011, a, 8 sqq. cf. below, p. 247, n. 2). He thinks it a self-evident proposition that we can only decide upon the sensible properties of things—as upon the good and the evil, the beautiful and the

sions of sense, but he believes that our sensations, as such, are not to blame. He holds that each sense represents to us always, or almost always, with truth the special colour, sound, etc., which it perceives, but that illusion first arises in the referring of these properties to definite objects, and in the discriminating of that which is immediately given in perception from that which is only got by abstraction therefrom.[1]

To these views, then, as to the nature or origin of knowledge, the arrangement of Aristotle's theory of scientific knowledge—his Analytics—corresponds. It is the function of Science to explain the phenomena by their principles, which must be sought for in the Universal Causes and Laws. The deduction, therefore, of the

ugly—in a normal state of the senses and the mind.

[1] In this sense Aristotle himself illustrates his principle in *De An.* iii. 3, 428, b, 18: *ἡ αἴσθησις τῶν μὲν ἰδίων ἀληθής ἐστιν ἢ ὅτι ὀλίγιστον ἔχουσα τὸ ψεῦδος. δεύτερον δὲ τοῦ συμβεβηκέναι ταῦτα· καὶ ἐνταῦθα ἤδη ἐνδέχεται διαψεύδεσθαι· ὅτι μὲν γὰρ λευκὸν, οὐ ψεύδεται, εἰ δε τοῦτο τὸ λευκὸν, ἢ ἄλλο τι* [whether the white thing is, *e.g.*, a cloth or a wall], *ψεύδεται.* (So also at the end of c. 6.) *τρίτον δὲ τῶν κοινῶν καὶ ἑπομένων τοῖς συμβεβηκόσιν, οἷς ὑπάρχει τὰ ἴδια· λέγω δ' οἷον κίνησις καὶ μέγεθος, ἃ συμβέβηκε τοῖς αἰσθητοῖς περὶ ἃ μάλιστα ἤδη ἔστιν ἀπατηθῆναι κατὰ τὴν αἴσθησιν.* (About these *κοινὰ* see also *De Sensu*, c. i. 437, a, 8.) *De Sensu*, iv. 442, b, 8: *περὶ μὲν τούτων* [the *κοινὰ* just mentioned] *ἀπατῶνται, περὶ δὲ τῶν ἰδίων οὐκ ἀπατῶνται, οἷον ὄψις περὶ χρώματος καὶ ἀκοὴ περὶ ψόφων.* *Metaph.* iv. 5, 1010, b, 14. We can only trust the deliverance of each sense with regard to its own particular objects, those of sight with regard to colour, &c.: *ὧν* [*αἰσθήσεων*] *ἑκάστη ἐν τῷ αὐτῷ χρόνῳ περὶ τὸ αὐτο οὐδέποτέ φησιν ἅμα οὕτω καὶ οὐχ οὕτως ἔχειν. ἀλλ' οὐδ' ἐν ἑτέρῳ χρόνῳ περὶ τὸ πάθος ἠμφισβήτησεν, ἀλλὰ περὶ τὸ ᾧ συμβέβηκε τὸ πάθος.* The same wine may taste to us at one time sweet, at another not: *ἀλλ' οὐ τό γε γλυκὺ οἷόν ἐστιν ὅταν ᾖ, οὐδεπώποτε μετέβαλεν, ἀλλ' ἀεὶ ἀληθεύει περὶ αὐτοῦ καὶ ἔστιν ἐξ ἀνάγκης τὸ ἐσόμενον γλυκὺ τοιοῦτον.* Perception shows us primarily (as has been already said on pp. 206–7) only certain sets of qualities. The subjects to which these qualities belong are not immediately and exclusively determined by perception; nor are those other properties which are only inferred from what we perceive.

particular from the universal and of effects from causes, or in one word *Demonstration*, forms the task of Science: for in such deduction, according to Aristotle, consists all Proof. The premises, however, from which these deductive proofs must start cannot be themselves deduced by the same method. Nor are they immediately given in any innate kind of knowledge. It is only by working upwards from phenomena that we can reach the principles that underlie them: only from particulars that we can rise to universals. To do this scientifically is the business of *Induction*. Demonstration and Induction are accordingly the two component parts of the scientific process, and the essential subjects of Methodology. Both, however, presuppose the general elements of Thought, and cannot be explained without a knowledge of them. Aristotle, therefore, prefaces his theory of Proof with an examination of the Syllogism; and in connection with this he finds himself compelled to go more closely into the nature of the Judgment and the Proposition, as being the component parts of the Syllogism. It was not till a later period of his work (as we have already explained) that he went on to treat them separately, and even then this part of his Logic remained distinctly undeveloped. The same remark applies still more strongly to his doctrine of Concepts.[1] Nevertheless, it is with these last that we must begin, in order to proceed thereafter to the theory of judgments, and lastly to the Syllogism—inasmuch as certain definite views as to concepts are always presupposed by Aristotle in his discussion of Syllogistic Logic.

[1] Cf. pp. 192 sqq.

It was the search for general concepts which gave to philosophy under Socrates that new direction which not only Plato but also Aristotle followed in all essentials. As a natural result of this, we find that Aristotle, generally speaking, takes for granted the Socratico-Platonic theory of the nature of concepts and the problem of abstract thought.[1] But as we shall find him in his metaphysics contradicting Plato's doctrine of the independent reality of the Universal which we think in the Concept, so also in the matter of the logical handling of concepts he feels it necessary in connection with this criticism to obtain more accurate and definite conclusions on many points.[2] Plato had required that in conceptual definition attention should be restricted to the essential as opposed to the accidental properties of things;[3] and yet at the same time he had exalted all general notions to an absolute independence as Ideas, without any further distinction between conceptions of property and substance.[4] This distinction Aristotle introduces, for to him, as we shall see, the individual thing alone is Substance. But he does not merely separate the accidental from the essential.[5] He goes on

[1] Cf. pp. 162 sq. and 172 sq.

[2] For the following, besides PRANTL (*Gesch. d. Log.* i. 210 sqq.), and the other general works, cf. KUHN, *De Notionis Definitione qual. Arist. constituerit*, Halle, 1844; RASSOW, *Arist. de Notionis Definitione Doctrina*, Berl. 1843.

[3] See ZELL. *Ph. d. Gr.* pt. i. p. 518 sq.

[4] *Ibid.* 584 sqq.

[5] As to the distinction of the συμβεβηκὸς from the καθ' αὑτὸ cf. *Anal. Post.* i. 4, 73, a, 34 sqq.; *Top.* i. 5, 102, b, 4; *Metaph.* v. 7, c. 9 *init.*, c. 18, 1002, a, 24 sqq., c. 30, 1025, a, 14, 28, c. 6 *init.*; WAITZ, in *Categ.* 5, b, 16; *Anal. Post.* 71, b, 10. According to these passages everything belongs to any object 'καθ' αὑτὸ' which is, mediately or immediately, contained in the concept of that object; and all is 'κατὰ συμβεβηκὸς' which does not follow from the concept. To be a biped belongs to any man καθ' αὑτὸ,

to make a further subdivision of the latter head by distinguishing the Universal from the Genus, and both from the Concept or conceptual Essence of things.[1] A *Universal* is everything that appertains to several objects in common, not merely by accident, but by virtue of their nature.[2] If this common element is a qualification of the essence derived from some other more general, then the Universal is a property-concept, and indicates an essential property.[3] If it is of the essence of the things in question, then the Universal becomes a *Genus*.[4] If to the common distinguishing

for every man, as such, is a biped. To be educated is to him κατὰ συμβεβηκός. A συμβεβηκὸς is (*Top.* ibid.) ὃ ἐνδέχεται ὑπάρχειν ὁτῳοῦν ἑνὶ καὶ τῷ αὐτῷ καὶ μὴ ὑπάρχειν. Hence, what is said of a thing καθ' αὑτὸ is true of all things which fall under the same concept; but what is said κ. συμβεβηκὸς is only true in particular cases; and therefore all universal determinations are καθ' αὑτό. *Metaph.* v. 9, 1017, b, 35: τὰ γὰρ καθόλου καθ' αὑτὰ ὑπάρχει, τὰ δὲ συμβεβηκότα οὐ καθ' αὑτὰ ἀλλ' ἐπὶ τῶν καθ' ἕκαστα ἁπλῶς λέγεται. Cf. note 2, below. For more about the συμβεβηκὸς, see the second part of ch. vii., *infra*.

[1] Thus *Metaph.* vii. 3 *init.*: οὐσία in common usage means many different things: τὸ τί ἦν εἶναι καὶ τὸ καθόλου καὶ τὸ γένος . . . καὶ τέταρτον τούτων τὸ ὑποκείμενον.

[2] *Anal. Post.* i. 4, 73, b, 26: καθόλου δὲ λέγω ὃ ἂν κατὰ παντός τε ὑπάρχῃ καὶ καθ' αὑτὸ καὶ ᾗ αὐτό. φανερὸν ἄρα ὅτι ὅσα καθόλου ἐξ ἀνάγκης ὑπάρχει τοῖς πράγμασιν; *Part. An.* i. 4, 644, a, 24: τὰ δὲ καθόλου κοινά· τὰ γὰρ πλείοσιν ὑπάρχοντα καθόλου λέγομεν. (Likewise *Metaph.* vii. 13, 1038, b, 11.) Cf. last note but one.

[3] Such an essential quality Aristotle calls a καθ' αὑτὸ ὑπάρχον, a πάθος καθ' αὑτὸ, or a συμβεβηκὸς καθ' αὑτὸ, understanding in the last case by συμβεβηκὸς (the term being used in a sense different from that discussed above) broadly that ὃ συμβαίνει τινὶ, *i.e.* a quality; cf. *Metaph.* v. 30 *fin.* c. 7, 1017, a, 12, iii. 1, 995, b, 18, 25, c. 2, 997, a, 25 sqq. iv. 1, iv. 2, 1004, b, 5, vi. 1, 1025, b, 12, vii. 4, 1029, b, 13; *Anal. Post.* i. 22, 83, b, 11, 19, c. 4, 73, b, 5, c. 6, 75, a, 18, c. 7, 75, a, 42; *Phys.* i. 3, 186, b, 18, ii. 2, 193, b, 26, c. 3, 195, b, 13, iii. 4, 203, b, 33; *De An.* i. 1, 402, b, 16; *Rhet.* i. 2, 1355, b, 30; WAITZ, on *Anal. Post.* 71, b, 10; TRENDELENBURG, *De An.* 189 sq.; BONITZ, on *Metaph.* 1025, a,

[4] *Top.* i. 5, 102, a, 31: γένος δ' ἐστὶ τὸ κατὰ πλειόνων καὶ διαφερόντων τῷ εἴδει ἐν τῷ τί ἐστι κατηγορούμενον. ἐν τῷ τί ἐστι δὲ κατηγορεῖσθαι τὰ τοιαῦτα λεγέσθω, ὅσα ἁρμόττει ἀποδοῦναι ἐρωτηθέντα τί ἐστι τὸ προκείμενον (*e.g.* in a man: τί ἐστι; ζῷον). *Metaph.* v. 28,

qualities included in the notion of the Genus are added other marks which are again essential with reference to a certain part of the whole class, and by which such part is distinguished from the rest of the same Genus, then we arrive at the *Species*, which, accordingly, is made up of the Genus and the *specific differences*.[1] If,

1024, a, 36 sqq., where, among different meanings of γένος, the following are given: τὸ ὑποκείμενον ταῖς διαφοραῖς, τὸ πρῶτον ἐνυπάρχον ὃ λέγεται ἐν τῷ τί ἐστι . . . οὗ διαφοραὶ λέγονται αἱ ποιότητες (that these two descriptions apply to the same meaning of γένος is shown by Bonitz on this passage). *Ibid.* x. 3, 1054, b, 30: λέγεται δὲ γένος ὃ ἄμφω ταὐτὸ λέγονται κατὰ τὴν οὐσίαν τὰ διάφορα; x. 8, 1057, b, 37: τὸ γὰρ τοιοῦτον γένος καλῶ, ᾧ ἄμφω ἓν ταὐτὸ λέγεται, μὴ κατὰ συμβεβηκὸς ἔχον διαφοράν. *Top.* vii. 2, 153, a, 17: κατηγορεῖται δ' ἐν τῷ τί ἐστι τὰ γένη καὶ αἱ διαφοραί. Every γένος is consequently a καθόλου, but not every καθόλου a γένος; cf. *Metaph.* iii. 3, 998, b, 17, 999, a, 21, xii. 1, 1069, a, 27, &c., with i. 9, 992, b, 12, vii. 13, 1038, b, 16, 25 sq.; and BONITZ on *Metaph.* 299 sqq. To the distinction between genus and property is also partly referable the statement in *Categ.* c. 2, 1, a, 20 sqq. c. 5, that everything either (1) καθ' ὑποκειμένου τινὸς λέγεται, ἐν ὑποκειμένῳ δὲ οὐδενί ἐστιν, or (2) ἐν ὑποκειμένῳ μέν ἐστι καθ' ὑποκειμένου δὲ οὐδενὸς λέγεται, or (3) καθ' ὑποκειμένου τε λέγεται καὶ ἐν ὑποκειμένῳ ἐστίν, or (4) οὔτ' ἐν ὑποκειμένῳ ἐστὶν οὔτε καθ' ὑποκειμένου λέγεται. Of these divisions, the fourth comprises particular things: the first refers to genera and (c. 5, 3, a, 21) specific differences: the second to properties, activities and conditions—in fact, the συμβεβηκότα. To the first belongs the term 'man,' to the second the term 'grammar,' and to the fourth the term 'Socrates.' But the uncertainty of the whole division immediately appears in the description of the third class, for if there are notions which are predicated both καθ' ὑποκειμένου and ἐν ὑποκειμένῳ—*i.e.* which are at once genera and properties (the example Aristotle gives is the concept of 'science,' which is in the soul as its ὑποκείμενον, and is also predicated of each of the particular sciences)—then the genera and properties cannot be distinct and co-ordinate classes of universals. How undefined was the boundary between a 'genus' and a 'property' will be seen also in his treatment of Substance (on which see the first part of ch. vii., *infra*).

[1] *Metaph.* x. 7, 1057, b, 7: ἐκ γὰρ τοῦ γένους καὶ τῶν διαφορῶν τὰ εἴδη (for instance, the specific concepts 'black' and 'white' are made up of the generic notion χρῶμα and the distinguishing qualities διακριτικὸς and συγκριτικός: white is the χρῶμα διακριτικὸν, black is the χρῶμα συγκριτικόν). *Top.* vi. 3, 140, a, 28: δεῖ γὰρ τὸ μὲν γένος ἀπὸ τῶν ἄλλων χωρίζειν [the generic concept distinguishes

finally, an object is in this way, by the aggregate of its distinctive marks, so defined that the definition as a whole is applicable to no other object, then we have its *Concept*.[1] The object of the Concept is therefore the

what belongs to a genus from every other], τὴν δὲ διαφορὰν ἀπό τινος ἐν τῷ αὐτῷ γένει. *Ibid.* vi. 6, 143, b, 8, 19. (Further instances of the manner of using διαφορὰ are given by WAITZ, *Arist. Org.* i. 279; BONITZ, *Ind. Ar.* 192, a, 23.)—These distinguishing marks of species, Aristotle calls διαφορὰ εἰδοποιὸς (*Top.* vi. 6, 143, b, 7; *Eth.* x. 3, 1174, b, 5). From other properties he distinguishes them by their being able to be predicated of a subject (καθ' ὑποκειμένου λέγονται), but not being in a subject (ἐν ὑποκειμένῳ οὐκ εἰσί)—*i.e.* they do not subsist in a subject which would exist before themselves, or which might be conceived independently of them, but in one which *by* them alone *is* this definite subject (*Cat.* 5, 3, a, 21 sq.; cf. c. 2, 1, a, 24 sq.); they are not accidental but essential determinations (*Metaph.* vii. 4, 1029, b, 14, 1030, a, 14; *Top.* vi. 6, 144, a, 24: οὐδεμία γὰρ διαφορὰ τῶν κατὰ συμβεβηκὸς ὑπαρχόντων ἐστὶ, καθάπερ οὐδὲ τὸ γένος· οὐ γαρ ἐνδέχεται τὴν διαφορὰν ὑπάρχειν τινὶ καὶ μὴ ὑπάρχειν); they belong to the concept of the subject of which they are affirmed, and hence everything that is implied in them is also true of the species and of the individuals to which they belong (*Cat.* c. 5, 3, a, 21 sqq. b, 5). It can hence be said of them, that they (together with the genus) 'form the substance' (*Metaph.* vii. 12, 1038, b, 19: cf. following note) and that they 'express something substantial' (*Top.* vii. 2, *vid. supr.* p. 214, n. 4; and yet, looked at in themselves, they are not substances but qualities, for they express not a τί, but a ποιόν τι (*Top.* iv. 2, 122, b, 16, c. 6, 128, a, 26, vi. 6, 144, a, 18, 21; *Phys.* v. 2, 226, a, 27; *Metaph.* v. 14 *init.*). The apparent contradiction between Aristotle's different statements on the subject (brought out by TRENDELENBURG, *Hist. Beitr. z. Phil.* i. 56 sqq., and BONITZ, on *Metaph.* v. 14) may be solved in the manner indicated; cf. WAITZ, *ut supra*.

[1] *Anal. Post.* ii. 13, 96, a, 24. Many properties of things are also accidental to other things which fall under the same genus. Τὰ δὴ τοιαῦτα ληπτέον [in the determination of concepts] μέχρι τούτου, ἕως τοσαῦτα ληφθῇ πρῶτον, ὧν ἕκαστον μὲν ἐπὶ πλεῖον ὑπάρξει [is accidental also to other things], ἅπαντα δὲ μὴ ἐπὶ πλέον. ταύτην γὰρ ἀνάγκη οὐσίαν εἶναι τοῦ πράγματος—which will be further illustrated below. *Ibid.* 97, a, 18: we get the concept (λόγος τῆς οὐσίας) of a given object by dividing the genus into its species, and then the species to which our object belongs into its sub-species, and thus proceeding till we arrive at a group ὧν μηκέτι ἐστὶ διαφορὰ, *i.e.* that which is indivisible into any farther sets of opposed species, to one or other of which the object in question would belong (but about the actual tenableness of this

Substance, or more accurately the determinate Substance or peculiar Essence of the things in question;[1] and the

theory, cf. BONITZ, *Arist. Metaph.* ii. 346, 1). So also *Metaph.* vii. 12, 1037, b, 29: οὐθὲν γὰρ ἕτερόν ἐστιν ἐν τῷ ὁρισμῷ, πλὴν τό τε πρῶτον λεγόμενον γένος καὶ αἱ διαφοραί (or as it stands 1038, a, 8: ὁ ὁρισμός ἐστιν ὁ ἐκ τῶν διαφορῶν λόγος). The genus is divided into its species, the latter into their sub-species, and this is continued ἕως ἂν ἔλθῃ εἰς τὰ ἀδιάφορα (*ibid.* l. 15); and since in this series every subsequent *differentia* includes the preceding one (*e.g.* the δίπουν includes the ὑπόπουν), therefore the intermediate terms which fall between the genus and the lowest specific difference do not need to be repeated in the definition (cf. also *Part. An.* i. 2 *init.*). So it follows (*Met.* ibid. 1038, a, 28): ὅτι ἡ τελευταία διαφορὰ ἡ οὐσία τοῦ πράγματος ἔσται καὶ ὁ ὁρισμός: in which, however, we have to understand by the τελευταία διαφορὰ, not only the last specific difference as such, but the specific concept as determined by it, which embraces the higher species and the genus.

[1] For the designation of that which is thought of in the concept, Aristotle makes use of various expressions. Besides οὐσία and εἶδος (of which we shall have more to say in dealing with the Metaphysics), we have to notice in this connection his way of marking out the idea which a word expresses by placing a ὅπερ before it, as: ὅπερ ὄν, or ὅπερ ἕν (*Phys.* 3, 186, a, 32 sqq.), for 'Being, as such,' or 'One, as such' (cf. BONITZ, *Ind. Arist.* 533, b, 36 sqq.); and also his special use of εἶναι with a dative annexed (for instance, τὸ ἀνθρώπῳ εἶναι, &c., τὸ ἑνὶ εἶναι τὸ ἀδιαιρέτῳ ἐστὶν εἶναι, *Metaph.* x. 1, 1052, b, 16: οὐ γάρ ἐστι τὸ σοὶ εἶναι τὸ μουσικῷ εἶναι, *ibid.* vii. 4, 1029, b, 14, cf. *Ind. Ar.* 221, a, 34); and the phrase τὸ τί ἦν εἶναι.—In the second of these expressions the dative must (according to TRENDELENBURG, *Rh. Mus.* 1828, 481; SCHWEGLER, *Ar. Metaph.* iv. 371) be taken possessively, so that ἀνθρώπῳ εἶναι is equivalent to εἶναι τοῦτο ὅ ἐστιν ἀνθρώπῳ = 'to be that which belongs to man'; and so τὸ ἀνθρώπῳ εἶναι designates the manner of being that is peculiar to man = 'Man's Being'; whereas ἄνθρωπον εἶναι only signifies the condition of one who is a man, or the actual participation in human nature. For the proof of this explanation such passages as the following will serve: τὸ εἶναι αὐτῷ ἕτερον, τὸ ζῆν τοῖς ζῶσι τὸ εἶναί ἐστιν (BONITZ, *Ind. Ar.* 221, a, 42, 54 sq., *Arist. Stud.* iv. 377). The fact that the article is never put before the dative (for Aristotle does not say τὸ τῷ ἀνθρώπῳ εἶναι) does not stand in the way; for the τῷ in this case after τὸ would be very awkward as a matter of diction; and moreover this very omission of the article makes it clearer that in the ἀνθρώπῳ εἶναι we are dealing with that 'being' which belongs to man *as such*.—The τί ἦν εἶναι is also, as a rule, construed with the dative of the object (τὸ τί ἦν εἶναι ἑκάστῳ, &c.; cf. *Ind. Ar.* 764, a, 60 sq.); for it is (as ALEX. says, in *Schol.* 256, b, 14 on *Top.* 24 m.)

Concept itself is nothing else but *the thought of this*

equivalent to ὁ τί ἐστι τὸ εἶναι αὐτῷ δηλῶν λόγος. But to this account must be added the explanation of the force of the peculiar imperfect, which is meant to designate that in things which does not belong to the moment, but which throughout the whole course of their existence has represented their proper *esse*, *i.e.* the essential as distinguished from the contingent and transitory. (Cf. PLATO, *Theæt.* 156, A: the Heracliteans maintain ὡς τὸ πᾶν κίνησις ἦν καὶ ἄλλο οὐδὲν, and other examples *apud* SCHWEGLER, *ut supra*, 373 sq.). Hence τὸ τί ἦν εἶναι ἀνθρώπῳ properly means, 'that which in a man was his proper *esse*,' the true 'being' of man, that belonging to him which is also called the πρώτη οὐσία ἴδιος ἑκάστῳ (*Metaph.* vii. 13, 1038, b, 10; vii. 7, *vid. inf.*; vii. 5 *fin.*) But this is simply his Ideal Being, that of which we think, when we abstract from what is contingent to the phenomenal man before us, and from the material element on which that contingency rests; cf. *Metaph.* vii. 4, 1029, b, 19: ἐν ᾧ ἄρα μὴ ἐνέσται λόγῳ αὐτὸ, λέγοντι αὐτὸ, οὗτος ὁ λόγος τοῦ τί ἦν εἶναι ἑκάστῳ. So ch. 7, 1032, b, 14: λέγω δ' οὐσίαν ἄνευ ὕλης τὸ τί ἦν εἶναι. *Ibid.* xii. 9, 1075, a, 1: ἐπὶ μὲν τῶν ποιητικῶν ἄνευ ὕλης ἡ οὐσία καὶ τὸ τί ἦν εἶναι [sc. τὸ πρᾶγμά ἐστι]. And ch. 8, 1074, a, 35: τὸ δὲ τί ἦν εἶναι οὐκ ἔχει ὕλην τὸ πρῶτον· ἐντελέχεια γάρ. The τί ἦν εἶναι, therefore, goes with the εἶδος. *Metaph.* vii. 7, 1032, b, 1: εἶδος δὲ λέγω τὸ τί ἦν εἶναι ἑκάστου καὶ τὴν πρώτην οὐσίαν. *Ibid.* ch. 10, 1035, b, 32: εἶδος δὲ λέγω τὸ τί ἦν εἶναι. *Phys.* ii. 2, 194, a, 20: τοῦ εἴδους καὶ τοῦ τί ἦν εἶναι. In *Phys.* ii. 3, 194, b, 26: one of the four causes is τὸ εἶδος καὶ τὸ παράδειγμα· τοῦτο δ' ἐστὶν ὁ λόγος ὁ τοῦ τί ἦν εἶναι καὶ τὰ τούτου γένη—this being what Aristotle, in *Metaph.* i. 3, 983, a, 27, calls τὴν οὐσίαν καὶ τὸ τί ἦν εἶναι, but immediately afterwards τὸν λόγον also. In fact, all these expressions are constantly interchanged by him. Compare, for example, the *De An.* ii. 1, 412, b, 10, where οὐσία ἡ κατὰ τὸν λόγον is explained by τὸ τί ἦν εἶναι; *Metaph.* vi. 1, 1025, b, 28: τὸ τί ἦν εἶναι καὶ τὸν λόγον; vii. 5, 1030, b, 26: τὸ τί ἦν εἶναι καὶ ὁ ὁρισμός (similarly *Part. An.* i. 1, 642, a, 25, cf. *Phys.* ii. 2, *ut supra*); *Eth.* ii. 6, 1107, a, 6: κατὰ μὲν τὴν οὐσίαν καὶ τὸν λόγον τὸν τί ἦν εἶναι λέγοντα.—The τί ἦν εἶναι stands to the simple τί ἐστι as the particular and definite to the universal and indefinite. Whilst 'τί ἦν εἶναι' only designates the form or peculiar being of a thing, the question, 'τί ἐστιν;' may be answered by giving either the matter only or that which includes both matter and form, or even by giving merely a property; and even when it is answered by giving the ideal form, the answer need not embrace the whole concept of the thing, but may be confined to the genus, or the specific difference (the proof of this is given by SCHWEGLER, *Arist. Metaph.* iv. 375 sqq.). The τί ἦν εἶναι is, consequently, a definite species of the τί ἐστι (hence *De An.* iii. 6, 430, b, 28: τοῦ τί ἐστι κατὰ τὸ τί ἦν εἶναι = 'Being on its essential side'); and thus, as very com-

*Essence.*[1] And this is arrived at by the process of making the Universal of the Genus determinate by means of the aggregate of distinguishing marks.[2] But

monly happens in Aristotle, the latter may be used in the narrower meaning of the τί ἦν εἶναι, whereas the other phrase never has the looser sense of the τί ἐστι, so as to designate merely the matter of the thing or a mere property, or a generic universal without the specific differences.—The like relation exists between εἶναι with the dative and εἶναι with the accusative: τὸ λευκῷ εἶναι designates the idea of what is white: τὸ λευκὸν εἶναι, the property of being white. Cf. SCHWEGLER, *loc. cit.* p. 370; *Phys.* iii. 5, 204, a, 23, *et alibi.*—Aristotle undoubtedly introduced the formula τὸ τί ἦν εἶναι. Even if Stilpo really used it (see ZELLER, *Ph. d. Gr.* pt. i. 223, 3), he probably took it from Aristotle. Again, Antisthenes could hardly have used the mere τί ἦν to designate the concept: at least, this does not follow from the references in ZELL. *ibid.* p. 252, n. 1.—The following writers treat at length of the τί ἦν εἶναι and the allied phrases: TRENDELENBURG (who was the first to examine this subject thoroughly), *Rhein. Mus. v. Niebuhr und Brandis*, ii. (1828), 457 sqq.; *De Anima*, 192 sqq., 471 sqq.; *Hist. Beitr.* i. 34 sqq.; SCHWEGLER, *ut supra*, 369 sqq. (who cites other authors); HERTLING, *Mat. u. Form. b. Arist.* 47 sq.

[1] *Anal. Post.* ii. 3, 90, b, 30, 91, a, 1: ὁρισμὸς μὲν γὰρ τοῦ τί ἐστι καὶ οὐσίας . . . ὁ μὲν οὖν ὁρισμὸς τί ἐστι δηλοῖ. *Ibid.* ii. 10 *init.*: ὁρισμὸς . . . λέγεται εἶναι λόγος τοῦ τί ἐστι. (The same *ibid.* 94, a, 11.) *Top.* vii. 5, 154, a, 31: ὁρισμός ἐστι λόγος ὁ τὸ τί ἦν εἶναι σημαίνων. *Metaph.* v. 8, 1017, b, 21: τὸ τί ἦν εἶναι οὗ ὁ λόγος ὁρισμὸς, καὶ τοῦτο οὐσία λέγεται ἑκάστου. So also vii. 4, 1030, a, 6, cf. a, 16, b, 4, and ch. 5, 1030, b, 26; also *Part. An.* i. 1, 642, a, 25. Hence Aristotle also designates the concept (in the subjective meaning) by the expressions: ὁ λόγος ὁ ὁρίζων τὴν οὐσίαν (*Part. An.* iv. 5, 678, a, 34), ὁ λόγος ὁ τί ἐστι λέγων (*Metaph.* v. 13, 1020, a, 18) and similar phrases. (Λόγος or λόγος τῆς οὐσίας, in relation to the objective meaning of λόγος, stands for the form or the Being of things: *e.g. Gen. An.* i. 1, 715, a, 5, 8; *De An.* i. 1, 403, b, 2; ii. 2, 414, a, 9, &c.; and cf. preceding note.)—By the nature of the case ὅρος is synonymous with ὁρισμὸς, *e.g.* in *Top.* i. 5 *init.*: ἔστι δ' ὅρος μὲν λόγος ὁ τὸ τί ἦν εἶναι σημαίνων. So ch. 4, 101 b, 21, and ch. 7, 103, a, 25; *Anal. Post.* i. 3, 72, b, 23; ii. 10, 97, b, 26; *Metaph.* vii. 5, 1031, a, 8; ch. 13, 1039, a, 19; viii. 3, 1043, b, 28; ch. 6, 1045, a, 26; *Poet.* ch. 6, 1449, b, 23. But the same word, in a further sense, signifies either of the two terms of a proposition (subject and predicate), and is therefore the standing expression for the three terms of the syllogism; *Anal. Pri.* i. 1, 24, b, 16: ὅρον δὲ καλῶ εἰς ὃν διαλύεται ἡ πρότασις, etc., ch. 4, 25, b, 32, ch. 10, 30, b, 31, ch. 34, 48, a, 2; *Anal. Post.* i. 10, 76, b, 35 *et supra.*

[2] Cf. pp. 215, n. 1, 216, n. 1. Aristotle expresses the relation

the essence of things, according to Aristotle, consists only in their form.[1] It is therefore only with the form that the Concept is concerned, and no concept of sensible objects *as such* can be presented to the mind.[2] For although a definite relation of Form to Matter does belong to the peculiar Essence and therefore also to

between these two elements, by designating the genus as the matter and the specific difference as the form of the concept; and by this he explains how in the concept the two are one. The genus is that, in other words, which, in itself indefinite, first becomes definite in the specific concept—the substratum (ὑποκείμενον), whose properties are the matter, and whose form is made up of the distinguishing marks. But the substratum never actually exists without properties, nor the matter without form, and therefore neither does the genus exist outside the species, but only in them; looked at in itself, it only contains the universal presupposition, the possibility of that which exists in reality in the lowest species; *Metaph.* viii. 6, cf. ch. 2, 1043, a, 19 : v. 6, 1016, a, 25: ch. 28, 1024, b, 3 : vii. 12, 1038, a, 25 : x. 8, 1058, a, 23 : cf. ch. 3, 1054, b, 27; *Phys.* ii. 9 *fin.*; *Gen. et Corr.* i. 7, 324, b, 6 (*Part. An.* i. 3, 643, a, 24, does not come in here).

[1] Cf. p. 217, n. 1. More fully treated in the account of Aristotle's Metaphysics, *infra*, ch. vii.

[2] See p. 219, n. 1, and *Metaph.* vii. 11, 1036, b, 28 : τοῦ γὰρ καθόλου καὶ τοῦ εἴδους ὁ ὁρισμός. So ch. 15 *init.*: by Substance is meant sometimes the λόγος alone, sometimes the λόγος σὺν τῇ ὕλῃ συνειλημμένος (the σύνολον). ὅσαι μὲν οὖν (sc. οὐσίαι) οὕτω [in the sense of the σύνολον] λέγονται, τούτων μὲν ἔστι φθορά· καὶ γὰρ γένεσις· τοῦ δὲ λόγου οὐκ ἔστιν οὕτως ὥστε φθείρεσθαι· οὐδὲ γὰρ γένεσις (οὐ γὰρ γίγνεται τὸ οἰκίᾳ εἶναι ἀλλὰ τὸ τῇδε τῇ οἰκίᾳ) . . . διὰ τοῦτο δὲ καὶ τῶν οὐσιῶν τῶν αἰσθητῶν τῶν καθ' ἕκαστα οὔθ' ὁρισμὸς οὔτ' ἀπόδειξίς ἐστιν, ὅτι ἔχουσιν ὕλην ἧς ἡ φύσις τοιαύτη ὥστ' ἐνδέχεσθαι καὶ εἶναι καὶ μή· διὸ φθαρτὰ πάντα τὰ καθ' ἕκαστα αὐτῶν. εἰ οὖν ἥ τ' ἀπόδειξις τῶν ἀναγκαίων καὶ ὁ ὁρισμὸς ἐπιστημονικὸς, καὶ οὐκ ἐνδέχεται, ὥσπερ οὐδ' ἐπιστήμην ὁτὲ μὲν ἐπιστήμην ὁτὲ δ' ἄγνοιαν εἶναι, ἀλλὰ δόξα τὸ τοιοῦτόν ἐστιν (*vid. supra* p. 163), οὕτως οὐδ' ἀπόδειξιν οὐδ' ὁρισμὸν, ἀλλὰ δόξα ἐστὶ τοῦ ἐνδεχομένου ἄλλως ἔχειν, δῆλον ὅτι οὐκ ἂν εἴη αὐτῶν οὔτε ἀπόδειξις. As soon as we perceive it no longer, we do not know whether it is now the same as we think it to be. (Cf. *Top.* v. 3, 131, b, 21; *Anal. Pri.* ii. 21, 67, a, 39.) And in ch. 10, 1035, b, 34 : τοῦ λόγου μέρη τὰ τοῦ εἴδους μόνον ἐστὶν, ὁ δὲ λόγος ἐστὶ τοῦ καθόλου· τὸ γὰρ κύκλῳ εἶναι καὶ κύκλος καὶ ψυχῇ εἶναι καὶ ψυχὴ ταὐτά· τοῦ δὲ συνόλου ἤδη, οἷον κύκλου τουδὶ, τῶν καθέκαστά τινος ἢ αἰσθητοῦ ἢ νοητοῦ (λέγω δὲ νοητοὺς μὲν οἷον τοὺς μαθηματικοὺς, αἰσθητοὺς δὲ οἷον τοὺς χαλκοῦς καὶ τοὺς ξυλίνους—but even the former have a ὕλη, only it is a ὕλη νοητή, 1036, a, 9 sqq.), τούτων δὲ

the Concept of any object,[1] yet it is not *this object* of sense itself, but only *this determinate mode* of sensible existence, only the universal form of the object, which can be defined.[2] It follows as a consequence of this that the conception does not relate to individual objects of sense[3] as such; but this applies also to all Individuals in general. Knowledge, in fact, aims always at a Universal,[4] and the words of which a definition is made up are themselves general terms.[5] Each concept

οὐκ ἔστιν ὁρισμὸς ἀλλὰ μετὰ νοήσεως ἢ αἰσθήσεως γνωρίζονται, ἀπελθόντας [-τα] δ' ἐκ τῆς ἐντελεχείας οὐ δῆλον πότερόν ποτε εἰσὶν ἢ οὐκ εἰσὶν, ἀλλ' ἀεὶ λέγονται καὶ γνωρίζονται τῷ καθόλου λόγῳ· ἡ δ' ὕλη ἄγνωστος καθ' αὑτήν.

[1] As in the concept of the house (*Metaph.* vii. 15, see preceding note), the soul, the axe (*De An.* i. 403, b, 2: ii. 1, 412, b, 11), of the σιμὸν (*Metaph.* vii. 5, &c.), in fact in all concepts of material and natural things. Cf. *Phys.* ii. 9 *fin.*: although the material causes are subservient to the ideal or final causes, still in explaining natural phenomena we must give both; ἴσως δὲ καὶ ἐν τῷ λόγῳ ἐστὶ τὸ ἀναγκαῖον [*i.e.* because the physical or material causes belong to the concepts of things]. ὁρισαμένῳ γὰρ τὸ ἔργον τοῦ πρίειν, ὅτι διαίρεσις τοιαδί· αὕτη δ' οὐκ ἔσται, εἰ μὴ ἕξει ὀδόντας τοιουσδί· οὗτοι δ' οὔ, εἰ μὴ σιδηροῦς. ἔστι γὰρ καὶ ἐν τῷ λόγῳ ἔνια μόρια ὡς ὕλη τοῦ λόγου. Cf. *Metaph.* vii. 10, 1035, a, 1, b, 14, and ch. 11, 1037, a, 29.

[2] If on the one hand we deny that matter belongs to the concept of a thing, and on the other are obliged to admit that numberless things cannot be defined without giving their matter, this seems, at first sight, a contradiction. In the passage referred to (*Metaph.* vii. 10) Aristotle seeks to escape this contradiction by saying that in such cases, not this individual object, formed by the combination of a specific concept with this definite matter, is defined, but only its form; it is not *this* circle, but *the* circle, or the κύκλῳ εἶναι, not *this* soul, but *the* soul, the ψυχῇ εἶναι. But the difficulty is, indeed, by no means removed in this way. If, for instance, the soul is the 'Entelechy' of an organic body (*De An.* ii. 1), the τί ἦν εἶναι τῷ τοιῷδε σώματι (*Metaph. ibid.* 1035, b, 16), then a matter constituted in a stated way belongs to the concept of the soul.

[3] *Metaph.* vii. 15, 1039, b, 27, as at p. 220, n. 2, *supra*.

[4] *Vid. supra*, p. 163, n. 2.

[5] *Metaph. ibid.* 1040, a, 8: not only are sensible things incapable of definition, but also ideas: τῶν γὰρ καθ' ἕκαστον ἡ ἰδέα, ὥς φασι, καὶ χωριστή. ἀναγκαῖον δ' ἐξ ὀνομάτων εἶναι τὸν λόγον· ὄνομα δ' οὐ ποιήσει ὁ ὁριζόμενος, ἄγνωστον

embraces several individuals, or at least can embrace several;[1] and even if we descend to the lowest species we are still always met by universal determinations only. Within these, the individual entities are distinguished no longer by anything relating to species, but only by accidental marks of difference.[2] Between

γὰρ ἔσται. τὰ δὲ κείμενα κοινὰ πᾶσιν. ἀνάγκη ἄρα ὑπάρχειν καὶ ἄλλῳ ταῦτα· οἷον εἴ τις σὲ ὁρίσαιτο, ζῷον ἐρεῖ ἰσχνὸν ἢ λευκὸν ἢ ἕτερόν τι ὃ καὶ ἄλλῳ ὑπάρξει.

[1] *Loc. cit.* l. 14, Aristotle proposes the objection: μηθὲν κωλύειν χωρὶς μὲν πάντα πολλοῖς, ἅμα δὲ μόνῳ τούτῳ ὑπάρχειν (which is really the case in the determination of concepts, *vid. supra*, p. 216, n. 1), and he gives among other answers this (cf. BONITZ, on this passage) at l. 27: 'even though an object be the only one in its species, like the sun and the moon, still its concept could only contain such things ὅσα ἐπ' ἄλλου ἐνδέχεται, οἷον ἐὰν ἕτερος γένηται τοιοῦτος, δῆλον ὅτι ἥλιος ἔσται· κοινὸς ἄρα ὁ λόγος, &c.' Similarly, in *De Cœlo*, i. 9, 278, a, 8: supposing there were only one circle, οὐθὲν ἧττον ἄλλο ἔσται τὸ κύκλῳ εἶναι καὶ τῷδε τῷ κύκλῳ, καὶ τὸ μὲν εἶδος, τὸ δ' εἶδος ἐν τῇ ὕλῃ καὶ τῶν καθ' ἕκαστον. *Ibid.* b, 5: there is only one world, but still the οὐρανῷ εἶναι and the τῷδε τῷ οὐρανῷ εἶναι are two different things.

[2] *Metaph.* vii. 10 (*vid. supr.* p. 220, n. 2): ὁ λόγος ἐστὶ τοῦ καθόλου. *Anal. Post.* ii. 13, 97, b, 26: αἰεὶ δ' ἐστὶ πᾶς ὅρος καθόλου. The determination of concepts may be continued till all specific differences are exhausted, and the τελευταία διαφορὰ is reached; but below this there only remain individuals which are no longer specifically distinguished (see *Metaph.* x. 9, 1058, a, 34 sqq. and *supra*, p. 216, n. 1), and are in a sense ὅμοια (*Anal. Post.* ii. 13, 97, a, 37, b, 7); these, however, continue to form a multiplicity, and, in fact, an indefinite multiplicity, and for this reason cannot be the object of science and of the concept; *Metaph.* iii. 4, *init.*: εἴτε γὰρ μὴ ἔστι τι παρὰ τὰ καθέκαστα, τὰ δὲ καθέκαστα ἄπειρα, τῶν δ' ἀπείρων πῶς ἐνδέχεται λαβεῖν ἐπιστήμην; cf. ii. 2, 994, b, 20 sqq.; *Top.* ii. 2, 109, b, 14; *Anal. Post.* i. 24, 86, a, 3 sqq. and *ibid.* c. 19–21, the proof that argument cannot be continued to infinity either upwards or downwards. In this Aristotle exactly follows Plato: see ZELL. *Ph. d. Gr.* pt. i. p 524, 3, 587, 1.—Aristotle designates singulars by the phrases: τὰ καθ' ἕκαστα (or κ. ἕκαστον), τὸ ἀριθμῷ ἓν (*Metaph.* iii. 4, 999, b, 34; *Categ.* c. 2, 1, b, 6, *et supra*; see WAITZ on this passage), τὰ τινὰ, ὁ τὶς ἄνθρωπος, &c. (*Categ. ibid.* 1, 4, b; *Anal. Post.* i. 24, 85, a, 34; *Metaph.* vii. 13, 1038, b, 33), τόδε τι (*Categ.* c. 5, 3, b, 10; *Metaph.* ix. 7, 1049, a, 27 *et supra*; see WAITZ on this passage of the *Categories*), also τὰ ἄτομα (e.g. *Categ.* c. 2, 1, b, 6, c. 5, 3, a, 35; *Metaph.* iii. 1, 995, b, 29. It is true

this accidental difference and the specific differences lie those attributes which belong exclusively to the members of a certain species, without, however, being directly included in their Concept; and Aristotle calls these *Properties* (ἴδια).[1] But in a wider sense this name is also used by him to include specific differences on the one side and accidental qualities on the other.[2]

What falls under one Concept must be, so far as this is the case, identical.[3] What does not fall under

that the lowest species, which do not divide into sub-species—the ἀδιάφορα, *vid. supra*, p. 216, n. 1—are given the same name: but in that case, whenever this meaning does not appear from the context itself, he uses, not merely τὰ ἄτομα, but ἄτομα εἴδη and similar expressions (cf. *Metaph.* iii. 3, 999, a, 12, v. 10, 1018, b, 6, vii. 8 *fin.*, x. 8, 9, 1058, a, 17, b, 10, xi. 1, 1059, b, 35) or τὰ ἔσχατα, because in descending from the most universal they come last (*Metaph.* xi. 1, 1059, b, 26; *Eth. N.* vi. 12, 1143, a, 29, 33; *De An.* iii. 10, 433, a, 16; *De Mem.* c. 2, 451, a, 26).

[1] In *Top.* i. 4, 101, b, 17, he distinguishes γένος, ἴδιον, and συμβεβηκός; and as soon as he has divided the ἴδιον again into ὅρος and ἴδιον in the narrower sense, he defines the latter, c. 5, 102, a, 17: ἴδιον δ' ἐστὶν ὃ μὴ δηλοῖ μὲν τὸ τί ἦν εἶναι, μόνῳ δ' ὑπάρχει καὶ ἀντικατηγορεῖται τοῦ πράγματος [is related to it as an interchangeable concept], οἷον ἴδιον ἀνθρώπου τὸ γραμματικῆς εἶναι δεκτικόν, &c.

[2] Already (*loc. cit.*) he distinguishes the ποτὲ ἢ πρός τι ἴδιον from the ἁπλῶς ἴδιον, and in the 5th book, which deals with the topical treatment of the ἴδια (c. 1) he distinguishes the ἴδιον καθ' αὑτὸ from the ἴδιον πρὸς ἕτερον, the ἀεὶ ἴδιον from the ποτὲ ἴδιον. He himself, however, remarks (129, a, 32) of the ἴδιον πρὸς ἕτερον, and it is true in any case of the ποτὲ ἴδιον, that it belongs to the συμβεβηκότα. On the other hand, he gives as examples of the ἴδ. καθ' αὑτὸ and ἀεὶ essential marks such as ζῷον ἀθάνατον, ζῷον θνητὸν, τὸ ἐκ ψυχῆς καὶ σώματος συγκείμενον (128, b, 19, 35, 129, a, 2). Cf. preceding note.

[3] Aristotle does not say so in these words, but it is shown by his discussions on the various meanings of ταὐτὸν. In *Top.* i. 7 (cf. viii. 1, 151, b, 29; 152, b, 31) three of these are distinguished: γένει ταὐτὸν is what belongs to one genus, εἴδει ταὐτὸν what belongs to one species (cf. *Metaph.* x. 8, 1058, a, 18), and ἀριθμῷ ταὐτὸν, ὧν ὀνόματα πλείω τὸ δὲ πρᾶγμα ἕν. This last kind of identity may be expressed in various ways: κυριώτατα μὲν καὶ πρώτως ὅταν ὀνόματι ἢ ὅρῳ τὸ ταὐτὸν ἀποδοθῇ, καθάπερ ἱμάτιον λωπίῳ καὶ ζῷον πεζὸν δίπουν ἀνθρώπῳ, δεύτερον δ' ὅταν τῷ ἰδίῳ, καθάπερ τὸ ἐπιστήμης

one concept is different.[1] Complete Identity, however, implies unity of matter also, for individuals between which there is no difference of a species are yet different numerically, because in each of them the same concept presents itself in a different matter.[2] Conceptual distinction in the highest degree gives us *Contrary Opposition*; whereas simple difference produces *Contradictory Opposition*. For *Contraries* (ἐναντία) are such as, within the same Genus, lie as far as possible asunder.[3] Contrary opposition, in fact, is

δεκτικὸν ἀνθρώπῳ, . . . τρίτον δ' ὅταν ἀπὸ τοῦ συμβεβηκότος, οἷον τὸ καθήμενον ἢ τὸ μουσικὸν Σωκράτει. There is a somewhat different division in *Metaph.* v. 9. Aristotle there distinguishes, first, the ταὐτὰ κατὰ συμβεβηκὸς and ταὐτὰ καθ' αὑτά; then the ταὐτὸν εἴδει and ἀριθμῷ, both of which are affirmed partly of that which has a Matter, partly of that which has an Essence (fuller at x. 3, 1054, a, 32: that is identical in number which both in Matter and in Form is one). As a general explanation he gives us a formula which is easily reducible to the one cited above: ἡ ταὐτότης ἑνότης τίς ἐστιν ἢ πλειόνων τοῦ εἶναι ἢ ὅταν χρῆται ὡς πλείοσιν (as in αὐτὸ αὐτῷ ταὐτόν). Since, however (according to ch. 10, 1018, a, 35), Unity and Being can be used in different senses, the meaning of the ταὐτὸν, ἕτερον, &c. must vary accordingly.

[1] *Metaph.* v. 9, 1018, a, 9: ἕτερα δὲ λέγεται ὧν ἢ τὰ εἴδη πλείω ἢ ἡ ὕλη ἢ ὁ λόγος τῆς οὐσίας· καὶ ὅλως ἀντικειμένως τῷ ταὐτῷ λέγεται τὸ ἕτερον. On εἴδει and γένει ἕτερον, cf. *ibid.* x. 8, v. 10, 1018, a, 38 sqq. and ch. 28, 1024, b, 9.

[2] See preceding note and p. 222, n. 2. That the individual differences of things must be based on Matter will be further shown later on, in the second part of ch. vii. *infra.*

[3] Aristotle states this definition, *Categ.* c. 6, 6, a, 17; *Eth. N.* ii. 8, 1108, b, 33, as one already in use (ὁρίζονται); but in *Metaph.* x. 4 *init.*, he puts it forward in his own name, and he there establishes the proposition that opposites must belong to the same genus, by observing expressly: τὰ μὲν γὰρ γένει διαφέροντα οὐκ ἔχει ὁδὸν εἰς ἄλληλα, ἀλλ' ἀπέχει πλέον καὶ ἀσύμβλητα (*e.g.* a sound and a colour are not *opposed* to one another, because they cannot at all be compared, they are ἀσύμβλητα). Yet, on the other hand, we read in *Metaph.* v. 10, 1018, a, 25: ἐναντία λέγεται τά τε μὴ δυνατὰ ἅμα τῷ αὐτῷ παρεῖναι τῶν διαφερόντων κατὰ γένος, καὶ τὰ πλεῖστον διαφέροντα τῶν ἐν τῷ αὐτῷ γένει, καὶ τὰ πλεῖστον διαφέροντα τῶν ἐν ταὐτῷ δεκτικῷ (that the ἐναντία are

nothing but specific difference made absolute.[1] *Contradictory* opposition, on the other hand, is the relation

accidental to one and the same δεκτικὸν is confirmed by *Metaph.* x. 4, 1055, a, 29; *De Somn.* No. 1, 453, b, 27), καὶ τὰ πλεῖστον διαφέροντα τῶν ὑπὸ τὴν αὐτὴν δύναμιν, καὶ ὧν ἡ διαφορὰ μεγίστη ἢ ἁπλῶς ἢ κατὰ γένος ἢ κατ' εἶδος. τὰ δ' ἄλλα ἐναντία λέγεται τὰ μὲν τῷ τὰ τοιαῦτα ἔχειν, τὰ δὲ τῷ δεκτικὰ εἶναι τῶν τοιούτων, &c. (and the like in x. 4, 1055, a, 35), and *Categ.* c. 11 *fin.* also has: ἀνάγκη δὲ πάντα τὰ ἐναντία ἢ ἐν τῷ αὐτῷ γένει εἶναι [like black and white], ἢ ἐν τοῖς ἐναντίοις γένεσιν [like just and unjust], ἢ αὐτὰ γένη εἶναι [like good and evil]. SIMPL. cites something similar (*In Categ. Schol.* 84, a, 6; *Ar. Fr.* 117) from the treatise Π. ἀντικειμένων, about which cf. p. 70, n 4.—The more mature and correct statement is that which is given in *Metaph.* x. (*e.g.* good and evil could not be contraries if they did not fall under the same generic concept, that of moral behaviour); and, in fact, Aristotle himself (at 1055, a, 23 sqq.) resolves the earlier statements by bringing them into line with the idea of the ἐναντίον as there defined. It is only in reference to that definition of the ἐναντίον that we can understand Aristotle's important axiom (*Metaph.* iii. 2, 996, a, 20; iv. 2, 1004, a, 9, 1005, a, 3; xi. 3, 1061, a, 18; *An. Pri.* i. 36, 48, b, 5; *De An.* iii. 3, 427, b, 5, *et alibi*; see BONITZ and SCHWEGLER on *Metaph.* iii. 2, *loc. cit.*), τῶν ἐναντίων μία ἐπιστήμη. That is the *same* science which deals with the *same* things; things which belong to different genera, like sound and colour, belong also to different sciences: cf. *loc. cit.* 1055, a, 31.—Further, from the same definition of the ἐναντίον (*ibid.* 1055, a, 19, cf. *De Cœlo*, i. 2, 269, a, 10, 14, and *Phys.* i. 6, 189, a, 13) Aristotle deduced the principle that to each thing there can only be one contrary. Between contraries there may lie an indefinite number of intermediate grades, which are compounded of these contraries (as colours out of light and dark). Such intermediate grades are not found, however, between every pair of contraries, but only between those pairs of which one or other predicate does not necessarily belong to the subject concerned, and in which there is a gradual transition from one to the other. (*Metaph.* x. 7; *Categ.* c. 10, 11, b, 38 sqq., 12, b, 25 sqq. cf. SIMPL. *Categ. Schol. in Ar.* 84, a, 15 sqq., 28 sqq.) What Aristotle had in his mind in this doctrine of the ἐναντίον is the scale of changes in the natural sciences; for every change is a transition from one condition to the opposite; *Phys.* v. 3, 226, b, 2, 6, i. 4, 187, a, 31, c. 5, 188, a, 31 sqq.; *Gen. et Corr.* i. 7, 323, b, 29.—To the above definition of the εἴδει ἐναντίον corresponds that of the ἐναντίον κατὰ τόπον in *Meteor.* ii. 6, 363, a, 30, and *Phys.* v. 3, 226, b, 32.—The correct way of formulating oppositions was dealt with in the treatise Π. ἀντικειμένων (*vid. supra* p. 70, n. 4, and SIMPL. *loc. cit.* 83, b, 39 sqq.; *Ar. Fr.* 116).

[1] The διαφορὰ τέλειος of *Me-*

between such concepts as stand to one another in the relation of Yes to No,[1] of affirmation to negation, and between which, therefore, no third or middle term can lie,[2] and of which as applied to every given object one or other must be true.[3] This kind of opposition, to put it differently, arises when everything which is not contained in a certain concept is collected into one negative expression,[4] *i.e.* where the aggregate of all possible determinations is divided between two concepts by the test of identity with or difference from some given determinant. Between contrary and contradictory opposition Aristotle places that of *privation and possession*,[5] though he is not able quite to establish the difference[6] between this and the other two kinds of

*taph.* x. 4, 1055, a, 10 sqq., 22 sqq. Since this opposition only occurs between abstract concepts and not between concrete things, the tract Π. ἀντικειμένων maintained that only the concepts (*e.g.* φρόνησις and ἀφροσύνη) were to be called ἁπλῶς ἐναντία, not the beings to which these concepts apply (such as the φρόνιμος and the ἄφρων). SIMPL. *loc. cit.* 83, b, 24 sqq., cf. PLATO, *Phædo*, 103 B.

[1] Aristotle's standing formula for this kind of opposition is therefore, 'ὡς κατάφασις καὶ ἀπόφασις ἀντικεῖσθαι.' In a judgment the like opposition is called ἀντίφασις (*vid.* n. 6, &c., *infra*); and in *Phys.* v. 3, 227, a, 8 and *Metaph.* iv. 7 *init.*, v. 10 *init.*, the opposition of concepts is included under the same word.

[2] *Metaph.* iv. 7, xi. 6, 1063, b, 19; *Phys. loc. cit.*, and cf. what will be said presently about contradictory judgment. The kind of opposition is the same there as here: see *Categ.* c. 10, 12, b, 10.

[3] *Categ.* c. 10, 11, b, 16 sqq., 13, a, 37 sqq.; and *Metaph.* x. 1057, a, 33.

[4] An ὄνομα or ῥῆμα ἀόριστον; *vid. infra*, p. 232, n. 2.

[5] Ἕξις and στέρησις, *e.g.* 'seeing' and 'blind.' For what follows, cf. TRENDELENBURG, *Hist. Beitr.* i. 103 sqq.

[6] In *Metaph.* v. 22 (and, referring to this, x. 4, 1055, b, 3) Aristotle distinguishes three meanings of the στέρησις: (1) ἂν μὴ ἔχῃ τι τῶν πεφυκότων ἔχεσθαι, κἂν μὴ αὐτὸ ᾖ πεφυκὸς ἔχειν, οἷον φυτὸν ὀμμάτων ἐστερῆσθαι λέγεται. (2) ἂν πεφυκὸς ἔχειν, ἢ αὐτὸ ἢ τὸ γένος, μὴ ἔχῃ. (3) ἂν πεφυκὸς καὶ ὅτε πέφυκεν ἔχειν μὴ ἔχῃ. Only in the first meaning would 'privation' be synonymous with 'negation' (for 'blind' = 'not-seeing'), and we could affirm of the opposites κατὰ στέρησιν καὶ ἕξιν that which we are told by *Categ.* c. 10, 13, b, 20 sqq. (that is to say, by the

opposition. Notions of *relation* are adduced as the author of the *Post-prædicamenta*) can *not* be affirmed of them, namely that 'everything is either one or the other' (either 'seeing' or 'blind'); in such a case, therefore, the relation between στέρησις and ἕξις would be reduced to that of ἀντίφασις. In the other two senses of στέρησις this is not the case, for in them the στέρησις itself, as is admitted in *Metaph.* iv. 12, 1019, b, 3 sqq., expresses something positive, and is a kind of ἕξις; and thus, if we take 'privation' in this sense, the opposition of the ἕξις comes under the definition of the ἐναντίον.—The distinction of the two in the *Post-prædicamenta* (*Categ.* c. 10, 12, b, 26 sqq.) is founded on the following argument: of those ἐναντία, which have no middle term between them (as 'straight' and 'crooked'), one or other must necessarily apply to everything capable of the distinction (*e.g.* 'every *number* must be either *odd* or *even*'); when, on the other hand, there is a middle term between two ἐναντία, such a conclusion never follows (we cannot say, 'Everything which is capable of colour must be either white or black'); but in the case of στέρησις and ἕξις, neither one nor the other of these results will arise; we cannot say that 'to everything capable of the distinction one or other of such opposites must apply,' for there may be some time at which neither of the two will apply to it—τὸ γὰρ μήπω πεφυκὸς ὄψιν ἔχειν οὔτε τυφλὸν οὔτε ὄψιν ἔχον λέγεται; but neither can we reckon this class of opposites with those between which there is a middle term—ὅταν γὰρ ἤδη πεφυκὸς ᾖ ὄψιν ἔχειν, τότε ἢ τυφλὸν ἢ ὄψιν ἔχον ῥηθήσεται. It is, however, to be observed that (1) so long as the thing in question is *not* πεφυκὸς ὄψιν ἔχειν, it is not δεκτικὸν ὄψεως either, and therefore the instance adduced is not to the point; and (2), on the other hand, there is much that is intermediate between 'possession' and 'privation,' for there are all the degrees of partial possession: there are not only 'seeing' things and 'blind' things, but also things 'half blind.'—A further distinction of the ἐναντία from the opposites κατὰ στέρησιν καὶ ἕξιν is said to lie in the fact (*Categ.* c. 10, 13, a, 18), that in the former the transition from one to the other is mutual (white can become black and black white), but in the latter only one-sided, from possession to privation, and not conversely. But this is likewise incorrect: not only can things which see become blind or the rich poor, but blind things may become seeing and the poor rich; and even if this is not possible in every actual case, the same is just as true of the ἐναντία themselves; neither can every sick man get well, nor every black thing become white. For the logical relation of concepts, such a distinction would in any case be of no importance.—Lastly, in *Metaph.* x. 4, 1055, b, 3, 7, 14, it is said that the στέρησις is a kind of ἀντίφασις, namely the ἀντίφασις ἐν τῷ δεκτικῷ, and the ἐναντιότης a kind of στέρησις (thus also in xi. 6, 1063, b, 17); so that, according to this, these three

subjects of a fourth sort of opposition.[1] Of all these kinds of opposition the general proposition holds good, that 'opposites fall within one and the same science.'[2]

concepts would form a kind of gradation from the higher to the lower. But this also can only be said when the concept of *στέρησις* is not accurately determined; as soon as this is done, the relation of *στέρησις* and *ἕξις* falls either under *ἀντίφασις* or under *ἐναντιότης*. To the latter result *Anal. Post.* i. 4, 73, b, 21 points: *ἔστι γὰρ τὸ ἐναντίον ἢ στέρησις ἢ ἀντίφασις ἐν τῷ αὐτῷ γένει, οἷον ἄρτιον τὸ μὴ περιττὸν ἐν ἀριθμοῖς*; for, to be an *ἐναντίον*, the *στέρησις* must express a positive concept, and this not merely indirectly, like the *ἀντίφασις* from which it is here distinguished. The same is true of passages like *Metaph.* vii. 7, 1033, a, 7 sqq., where the sick person—who is elsewhere the *ἐναντίον* of the healthy person—is given as his *στέρησις*; *ibid.* xii. 4, 1070, b, 11: *ὡς μὲν εἶδος [αἰτία τῶν σωμάτων] τὸ θερμὸν καὶ ἄλλον τρόπον τὸ ψυχρὸν ἡ στέρησις*, for cold forms a contrary opposition to warm, and if it is an *εἶδος*, it cannot be merely a negation; and hence, though it is given as a negation with other analogous concepts (*e.g. De Cœlo*, ii. 3, 286, a, 25), yet Aristotle himself in other passages admits that, in certain cases, it is a natural property, and not merely a defect (*Part. An.* ii. 2, 649, a, 18), and that it has the power of acting (*Gen. et Corr.* ii. 2, 329, b, 24), which cannot possibly be true of a *mere στέρησις*. Cf. TRENDELENBURG, *loc. cit.* 107 sqq., and STRÜMPELL, *Gesch. d. theor. Phil.* 27 sq.—The tract Π. *ἀντικειμένων* also treated of *στέρησις* and *ἕξις*; SIMPL. *Schol. in Ar.* 86, b, 41, 87, a, 2; *Ar. Fr.* 119. We shall have to discuss hereafter the metaphysical signification of *στέρησις* and its relation to the *ὕλη*.

[1] *Cat.* c. 10, 11, b, 17, 24 sqq.; *Top.* ii. 2, 109, b, 17, c. 8, 113, b, 15, 114, a, 13, v. 6, 135, b, 17; *Metaph.* x. 4, 1055, a, 38, c. 3, 1054, a, 23. Instances of such relative concepts are (see *Cat.*, *loc. cit.*, and c. 7; *Metaph.* v. 15): double and half—in fact, the manifold and its part, the *ὑπερέχον* and *ὑπερεχόμενον*; the active and the passive; the measurable and the measure; the knowable and knowledge. Though in *Metaph.* v. 10, two further forms of opposition are named, yet BONITZ, on this passage, and WAITZ, *Arist. Org.* i. 308, have demonstrated that these latter come under the four already given. Conversely, *Phys.* v. 3, 227, a, 7 only mentions two (*ἀντίφασις* and *ἐναντιότης*).

[2] See n. on p. 225, and as to the extension of the above principle to all *ἀντικείμενα*, cf. *Metaph.* iv. 2, 1004, a, 9; *Top.* i. 14, 105, b, 33, ii. 2, 109, b, 17, viii. 1, 155, b, 30, c. 13, 163, a, 2. The foundation of this proposition lies mainly in the fact that, of opposites, one cannot be known without the other. This has different causes in different cases: in contradictory opposition, it arises from the negative concept Non-A immediately presupposing and containing the positive one A; in correlative concepts it arises

But concepts taken by themselves cannot, so far, produce *Discourse* of any kind; they are neither true nor false. Definite expression, and therewith truth and falsehood likewise, are first found in the *Proposition*.[1] The coupling of the Noun or Name-word with the Verb or Time-word, of the Subject with the Predicate,[2] presents us with a unit of discourse (or spoken thought, λόγος);[3] and if this discourse takes the form of Assertion, if anything is affirmed or denied in it, we get, as distinguished from other modes of thought expressed in words,[4] the Proposition[5] or Judgment (ἀπόφανσις)[6]—for which Aristotle regards the simple Categorical Judgment as the type.[7] A judgment is *true*, when the thought whose inner process is

from their mutually presupposing one another; in contrary opposition, and in στέρησις and ἕξις (so far as that applies here) it arises because the knowledge of the opposed specific differences presupposes that of the common genus.

[1] *Vid. supra*, p. 202, &c.; *De Interpr.* c. 4, c. 5, 17, a, 17; *Metaph.* vi. 4; cf. ZELLER, *Ph. d. Gr.* pt. i., p. 527, 5; p. 528, 1.

[2] As to ὄνομα and ῥῆμα (the latter of which, however, includes both copula and predicate), see *De Interpr.* c. 1, 16, a, 13, c. 2, 3, c. 10, 19, b, 11; *Poet.* c. 20, 1457, a, 10, 14; *Rhet.* iii. 2, 1404, b, 26. This is also Platonic; see ZELL. *Ph. d. Gr.* pt. 1, pp. 557, n. 5, 532, n. 2.

[3] *De Interpr.* c. 4; and *Rhet.*, *ut supra*.

[4] Such as wish, request, &c. In *Anal. Pr.* i. 1, 24, a, 22; *Top.* i. 10, 104, a, 8 (cf. WAITZ, *Arist. Org.* i. 352). Interrogation is put under the concept of πρότασις, but it is distinguished as πρότασις διαλεκτικὴ from πρ. ἀποδεικτικὴ, in that the latter is λῆψις θατέρου μορίου τῆς ἀντιφάσεως, and the former, on the other hand, ἐρώτησις ἀντιφάσεως. Similar definitions of πρότασις will be found in *De Interpr.* ii. 20, b, 23, and *Anal. Post.* i. 2, 72, a, 8; cf. *Soph. El.* 6, 169, a, 8, 14.

[5] Πρότασις; on the expression cf. BIESE, *Phil. d. Arist.* i. 128, 2; WAITZ, *Arist. Org.* i. 368; BONITZ, *Ind. Ar.* 651, a, 33 sqq.

[6] *De Interpr.* c. 4, 17, a, 1; *Anal. Pr.* i. 1, 24, a, 16.

[7] *De Interpr.* c. 5, 17, a, 20: ἡ μὲν ἁπλῆ ἐστιν ἀπόφανσις . . . ἡ δὲ ἐκ τούτων συγκειμένη . . . ἔστι δὲ ἡ μὲν ἁπλῆ ἀπόφανσις φωνὴ σημαντικὴ περὶ τοῦ ὑπάρχειν τι ἢ μὴ ὑπάρχειν, ὡς οἱ χρόνοι διῄρηνται.

signified by the spoken words,[1] regards that as conjoined or divided which is so conjoined or divided in actuality: it is *false* in the opposite case.[2] The most fundamental distinction between judgments is therefore that of affirmative and negative.[3] Every affirmation stands opposed to a negation which forms with it an exclusive (contradictory) opposition (*ἀντίφασις*), in such wise that one or the other of them must be true and no third is possible.[4] On the other hand, certain affirmative propositions are related to certain negatives (as, for instance, universal affirmatives to the corresponding

[1] On the definition of speech as σύμβολον τῶν ἐν τῇ ψυχῇ παθημάτων, see *De Interpr.* c. 1, 16, a, 3, c. 2 *init.* c. 4, 17, a, 1; *Soph. El.* c. 1, 165, a, 6; *De Sensu*, c. 1, 437, a, 14; *Rhet.* iii. 1, 1404, a, 20. The events in the soul which words express are, according to these passages, the same in all men; their designation in speech, on the other hand, is (like written signs) a matter of convention, and thus differs in different persons.

[2] *Metaph.* vi. 4, ix. 1 *init.*

[3] *De Interpr.* c. 5 *init.*: ἔστι δὲ εἷς πρῶτος λόγος ἀποφαντικὸς κατάφασις εἶτα ἀπόφασις· οἱ δ' ἄλλοι πάντες συνδέσμῳ εἷς. Further, *ibid.* c. 5, 6; *Anal. Pr.* i. 1, 24, a, 16; *Anal. Post.* i. 25, 86, b, 33. The πρότασις καταφατικὴ is also called κατηγορικὴ, the ἀποφατικὴ also στερητική. *Anal. Pr.* i. 2, c. 4, 26, a, 18, 31, c. 6, 28, a, 20, b, 6, 15, c. 13, 32, b, 1.

[4] *De Interpr.* c. 6, c. 7, 17, b, 16; *Anal. Post.* i. 2, 72, a, 11: ἀπόφανσις δὲ ἀντιφάσεως ὁποτερονοῦν μόριον. ἀντίφασις δὲ ἀντίθεσις ἧς οὐκ ἔστι μεταξὺ καθ' αὑτήν. μόριον δ' ἀντιφάσεως τὸ μὲν τὶ κατά τινος κατάφασις, τὸ δὲ τὶ ἀπό τινος ἀπόφασις. Cf. p. 226, n. 1 and 2. We shall have more to say later on about the law of contradiction and the excluded middle. According to *De Interpr.* c. 9, an exception to the rule stated above is found in such disjunctive propositions as refer to a future result which is contingent or depends on free will. As is here remarked, we can assert nothing at all about them beforehand, neither that they will happen, nor that they will not happen; of them (*Gen. et Corr.* ii. 11, 337, b, 3) only ὅτι μέλλει, but not ὅτι ἔσται, is true; for the latter excludes the possibility of the event being otherwise. Hence of them only the disjunctive proposition is true, that 'they will either happen or will not happen.' Of the two categorical propositions, 'they will happen' and 'they will not happen,' *neither* is true of them. The latter assertion is remarkable, for we should rather say, that *one* of the two assertions *is* true, but we only find out

universal negatives) in the way of contrary opposition, which does *not* exclude a third possible case.[1]

But in truth we must not expect a perfectly clear exposition of these relations from Aristotle. As he was not yet able to distinguish the Copula expressly from the Predicate,[2] he was naturally unable to discover the true status of the Negative. He nowhere states that negation concerns the Copula alone, that it

*which* by the result. But Aristotle only regards as 'true' those assertions which assert actuality; and since this, in the given case, is itself undetermined, *no* definite proposition can, with truth, be then affirmed. When it is equally possible that something will happen, and that it will not happen, the assertion that it will happen is neither true nor false; it only *becomes* one or other, according as a corresponding or a contradictory state of fact arises. Cf. SIMPL. *Categ.* 103, β Bas.: according to the teaching of the Peripatetic school only the disjunctive proposition is true, 'A will either be or not be'; but which part of this disjunction will be true, and which false, ἄληπτον εἶναι τῇ φύσει καὶ ἄστατον. Hence all that class of assertions, ἤδη μὲν οὐκ ἔστιν ἢ ἀληθῆ ἢ ψευδῆ ἔσται δὲ ἢ τοῖα ἢ τοῖα.—It is from the Megareans that Aristotle took the subject-matter of the 'Aporia' which he discusses in the passage cited: cf. ZELLER, *Ph. d. Gr.* pt. i. p. 220, 1.

[1] *De Interpr.* c. 7, 17, b, 20: cf. what has been said at pp. 224–5, about the ἐναντιότης. The particular affirmative and particular negative propositions which, according to later terminology, are opposed as *subcontraries*, are, in *Anal. Pr.* ii. 8, 59, b, 10, reckoned among the ἐναντίως ἀντικείμεναι. Aristotle, however, remarks (c. 15 *init.*) that this is only 'according to the words, not as to the thing itself.'

[2] *Vid. supr.* p. 229, n. 2. In *De Interpr.* c. 10, 19, b, 19, a case is certainly before his mind, ὅταν τὸ ἔστι τρίτον προσκατηγορῆται, as in the proposition ἔστι δίκαιος ἄνθρωπος. This, however, does not relate to the separation of the copula from the predicate, but only to the fact that, in existential propositions: ἔστιν ἄνθρωπος, οὐκ ἔστιν ἄ., &c., the subject can be expanded by means of an added adjective, which itself may be put either affirmatively (δίκαιος ἄ.), or negatively (οὐ δίκαιος ἄ.): ἔστι δίκ. ἄ. means 'there is a just man,' which is different from ἄνθρωπος δίκαιός ἐστι, 'man is just.' Aristotle nowhere says that every proposition, or even that the existential proposition logically considered, consists of *three* parts; and the treatise Π. ἑρμηνείας even shows a preference for selecting examples from those existential propositions which fall into two parts only.

has to do only with the connection of the subject to the predicate, and does not in fact deny the subject or the predicate itself.[1] The omission caused him to treat propositions with a negative subject or predicate as a special class,[2] whereas there is in fact no ground for doing so.[3]

Aristotle proceeds to consider the *Quantity* of Judgments, distinguishing between those which relate to many objects at once and those which relate to one, and then subdividing the former into universals and particulars. He has therefore a general division into judgments universal, particular, and individual.[4] But

[1] In *Anal. Pr.* i. 46 *init.* c. 3, 25, b, 19, he shows that there is a distinction between μὴ εἶναι τοδὶ and εἶναι μὴ τοῦτο, μὴ εἶναι λευκὸν and εἶναι μὴ λευκὸν, inasmuch as propositions of the last kind have the form of affirmative propositions; but he does not detect the real reason of this either here or in *De Interpr.* c. 12 (to which BRANDIS, p. 165, refers).

[2] *De Interpr.* c. 3, 16, a, 30, b, 12, he says: οὐκ-ἄνθρωπος is no ὄνομα, and οὐχ-ὑγιαίνει no ῥῆμα; but he wants to call the former ὄνομα ἀόριστον, and the latter ῥῆμα ἀόριστον: and in c. 10, along with the propositions ἔστιν ἄνθρωπος, οὐκ ἔ. ἄ., &c., he introduces also the corresponding ones made up of negative concepts: ἔστιν οὐκ-ἄνθρωπος, οὐκ ἔστιν οὐκ-ἄ., ἔστιν οὐ-δίκαιος οὐκ-ἄνθρ., οὐκ ἔστιν οὐ-δίκ. οὐκ-ἄνθρ., &c. Theophrastus called these propositions: ἐκ μεταθέσεως (AMMON. *De Interpr.* 128, b, 129, a., and PHILOP. *Schol. in Ar.* 121, a), or κατὰ μετάθεσιν (ALEX. *Analyt.* 134, a.).

[3] For that in which consists the *form* of the judgment—the definite conjunction of the subject with the predicate—remains the same, whether the subject and predicate be positive or negative concepts. And Aristotle himself admits (*Anal. Pr.* i. 3, 25, b, 19, cf. c. 13, 32, a, 31), that expressions such as: ἐνδέχεται μηδενὶ ὑπάρχειν, ἔστιν οὐκ ἀγαθὸν, have a σχῆμα καταφατικὸν.

[4] Still, this is only the case in *De Interpr.* c. 7. Universal judgments, which are also called ἐπὶ τῶν καθόλου ἀποφαίνονται καθόλου, and particulars, which are also called ἐν μέρει or κατὰ μέρος (*Anal. Pr.* i. 1, 24, a, 17, c. 2, 25, a, 4, 10, 20, &c.), are also designated as those which ἐπὶ τῶν καθόλου μὲν μὴ καθόλου δὲ ἀποφαίνονται, *i.e.* in both the subject is a καθόλου, ὃ ἐπὶ πλειόνων πέφυκε κατηγορεῖσθαι, but in the one the predicate is affirmed of the subject in its whole extension, in the other not so. The *Analytics*, on the other hand, does not mention individual

he adds what he calls the 'indefinite judgments,' and thus is led to bring in, here as elsewhere, a distinction which really has nothing to do with the logical form of thought-connection at all, but solely with the grammatical form of the expression.[1]

Aristotle also devotes much attention to the *Modality* of Judgments, on account of the importance of this subject in connection with the *Syllogism.* He distinguishes between judgments which assert actuality, necessity, and possibility,[2] but this division does not coincide with that which is now in use—of Assertory, Apodeictic, and Problematic—for Aristotle in his classification does not regard subjective degrees of certainty, but the objective nature of things. By 'possible' he does not mean what *may perhaps* exist, but only what *may* exist but does not exist *necessarily*, and therefore *may or may not* exist indifferently.[3] The

judgments (see following note); and although it is true that they are without meaning for the main object of that treatise, which is the doctrine of the syllogism, yet we should expect that, if Aristotle at the time he wrote it had already had his attention called to this form of judgment, he would have expressly stated why he passed it over. We may infer, if the composition Π. ἑρμηνείας be really his, that the peculiar notes of individual judgments must have struck him *after* he had written *Analytics*.

[1] In the *De Interpr.* he adds nothing as to indefinite judgments. In *Anal. Pr.* i. 1, 24, a, 16 (cf. c. 2, 25, a, 4, c. 4, 26, b, 3, etc.) he says: πρότασις . . . ἢ καθόλου ἢ ἐν μέρει ἢ ἀδιόριστος; but the examples which are there given—τῶν ἐναντίων εἶναι τὴν αὐτὴν ἐπιστήμην, τὴν ἡδονὴν μὴ εἶναι ἀγαθόν,—belong, logically considered, to the class of universal propositions; others which might be adduced, such as ἔστιν ἄνθρωπος δίκαιος, are particular. Aristotle himself makes no further use in the *Analytics* of the προτάσεις ἀδιόριστοι. Theophrastus designated under this name the particular negative (ALEX. *Analyt.* 21, b), or perhaps as AMMON. *De Interpr.* 73, a, states, particular propositions in general.

[2] *Anal. Pr.* i. 2 *init.*: πᾶσα πρότασίς ἐστιν ἢ τοῦ ὑπάρχειν ἢ τοῦ ἐξ ἀνάγκης ὑπάρχειν ἢ τοῦ ἐνδέχεσθαι ὑπάρχειν.

[3] *Anal. Pr.* i. 13, 32, a, 18 λέγω δ' ἐνδέχεσθαι καὶ τὸ ἐνδεχόμε-

corollaries which he deduced from his definitions were partly confuted by critics as old as Theophrastus and Eudemus.[1] To what is called the 'Relation of Judg-

νον, οὗ μὴ ὄντος ἀναγκαίου, τεθέντος δ' ὑπάρχειν, οὐδὲν ἔσται διὰ τοῦτ' ἀδύνατον; l. 28: ἔσται ἄρα τὸ ἐνδεχόμενον οὐκ ἀναγκαῖον καὶ τὸ μὴ ἀναγκαῖον ἐνδεχόμενον. *Metaph.* ix. 3, 1047, a, 24: ἔστι δὲ δυνατὸν τοῦτο, ᾧ ἐὰν ὑπάρξῃ ἡ ἐνέργεια, οὗ λέγεται ἔχειν τὴν δύναμιν, οὐθὲν ἔσται ἀδύνατον. Likewise c. 4, 1047, b, 9, c. 8, 1050, b, 8: πᾶσα δύναμις ἅμα τῆς ἀντιφάσεώς ἐστιν . . . τὸ ἄρα δυνατὸν εἶναι ἐνδέχεται καὶ εἶναι καὶ μὴ εἶναι· τὸ αὐτὸ ἄρα δυνατὸν καὶ εἶναι καὶ μὴ εἶναι; ix. 9 *init.*: ὅσα γὰρ κατὰ τὸ δύνασθαι λέγεται, ταὐτόν ἐστι δυνατὸν τἀναντία: *i.e.* what can be healthy can also be ill, what can rest can also move, he who can build can also destroy.

[1] Aristotle says that in a 'possibility,' the possibility of the contrary is also contained (see preceding note, and *De Interpr.* c. 12, 21, b, 12: δοκεῖ δὲ τὸ αὐτὸ δύνασθαι καὶ εἶναι καὶ μὴ εἶναι· πᾶν γὰρ τὸ δυνατὸν τέμνεσθαι ἢ βαδίζειν καὶ μὴ βαδίζειν καὶ μὴ τέμνεσθαι δυνατόν, &c.), determining the concept by taking that meaning of δύναμις according to which it designates a power of doing or suffering (*Metaph.* ix. 1, 1046, a, 9 sqq., v. 12 *init.*); and it matters not that this possibility of the contrary is not always equally great, and that the ἐνδεχόμενον or δυνατὸν (for these two expressions are really synonymous) at one time designates something which happens as a rule, though not without exceptions, at another something which may equally happen or not happen (*Anal. Pr.* i. 13, 32, b, 4 sqq.). Hence he maintains in *Anal. Pr.* i. 13, 32, a, 29 (cf. *De Cœlo*, i. 12, 282, a, 4), that from the ἐνδέχεσθαι ὑπάρχειν the ἐνδέχεσθαι μὴ ὑπάρχειν also invariably follows, and from the παντὶ ἐνδέχεσθαι the ἐνδέχεσθαι μηδενὶ and μὴ παντὶ (*i.e.* the possibility of the predicate in question occurring to none, or not to all, for PRANTL, *Gesch. d. Log.* i. 267, explains the words wrongly); for since the possible is nothing necessary, the contrary of all that is (merely) possible may happen.—And for the same reason Aristotle refuses (*ibid.* c. 17, 36, b, 35) to allow, in possible propositions, the simple conversion of the universal negative judgment. For, since the negative judgment, 'it is possible that no B is A,' according to him, includes the affirmative, 'it is possible that every B is A,' so the simple conversion of the former would include the simple conversion of a universal affirmative judgment; and universal affirmative judgments cannot be converted simply. Theophrastus and Eudemus denied these assertions, because they understood by 'possible,' everything that can happen, and lost hold of the statement that it must also at the same time be able not to happen; and thus they included some things necessary in the possible (ALEX. *Anal. Pr.* 51, b, m, 64, b, 72, a, b, m, 73, a). Aristotle

ments ' Aristotle pays as little attention as to the Hypothetical and Disjunctive Syllogisms. Only in what he himself admits (*Anal. Pr.* i. 3, 25, a, 37; *De Interpr.* c. 13, 22, b, 29; cf. *Metaph.* ix. 2 *init.* c. 5, 1048, a, 4, c. 8, 1050, b, 30 sqq.) with regard to the forces of nature (δυνάμεις) which only act in one direction, that the necessary also *may be called* a possible (δυνατὸν), and that, allowing this, universal negative possible-propositions can be converted simply, and that we may conclude from necessity to possibility—but he also adds that this is not true as to *his own* concept of the possible.—Two further points of dispute, on which Alexander wrote a work (ALEX. *Anal.* 40, b, 83, a), arose between Aristotle and his pupils upon the question about the mood of conclusions in syllogisms, the premisses of which are in different moods. Aristotle says that where one premiss is a possible- and the other an actual-proposition, a perfect syllogism can only be had in the case where the major proposition is a possible-proposition; if, however, it is the minor, we get, first of all, an imperfect syllogism, *i.e.* one in which the conclusion is only obtained by a *deductio ad absurdum* and not immediately from the given premisses, and secondly, in the case of a negative syllogism (more correctly: in all cases), the possibility in the conclusion must be taken in the improper sense (*i.e.* not as confined to that which both can and cannot be) (*Anal. Pr.* i. 15). Theophrastus and Eudemus, on the contrary, were of opinion that even in this case there was a perfect possible-syllogism (ALEX. *loc. cit.* 56, b). Both sides are right, according to their concepts of the possible. If we understand by 'possible' everything that can be, including also the necessary, the syllogisms are quite correct and simple: 'Every B is A, every C can be B, therefore every C can be A'; 'No B is A, every C can be B, therefore it is possible that no C is A.' If, on the other hand, we take 'possible' to mean only that of which the contrary is likewise possible, we cannot make such syllogisms, because in this supposition the minor, 'every C can be B,' includes the negative proposition, 'every C can be not-B.' And also, as Theophrastus and Eudemus merely adhered to the principle that the modality of the conclusion is conformed to the weaker premiss (ALEX. *ibid.*), they asserted, on the same principle, that when one premiss is assertorial and the other apodeictic, the conclusion is apodeictic (ALEX. *ibid.* 40, a, 42, b, and from him PHILOP. *Schol. in Arist.* 158, b, 18, 159, a, 6), whilst, according to Aristotle (*Anal. Pr.* i. 9 sqq.) it is apodeictic when the major is so. In this case also, according to the meaning which we attach to the modality of propositions, both assertions may be made. If the propositions 'B must be A,' 'B cannot be A,' are supposed to express that between B and A there is (or is not) not a contingent, but a necessary connection, it follows that between every-

says of contradictory opposition[1] do we find the kernel of the late doctrine of disjunctive judgments. On the other hand, he is copious in his treatment of the Conversion of Propositions,[2] laying down the well-known rules,[3] but he treats it solely in connection with his theory of the Syllogism.

This theory of the Syllogism was expounded by Aristotle at full length, and it may truly be called his most original discovery.[4] As he was the first to introduce the name of the Syllogism into the scientific vocabulary,[5] so he was also the first to remark that all connections and all advances in our thought depend upon the syllogistic combination of judgments. A 'Syllogism' is a chain of thoughts, in which, from certain matters assumed, and by virtue of these alone, there issues of necessity some further matter different from them.[6]

thing contained in B and A, by the same necessity, there is, or is not, a connection (if all living beings, by reason of a necessity of nature, are mortal, the same is also true of every kind of living beings, *e.g.* of men), as Aristotle, *loc. cit.* 30, a, 21 sqq. shows quite clearly. If, on the other hand, these propositions are meant to state that we are obliged to think A connected or not connected with B, the proposition, 'C must (or cannot) be A' can only be deduced from the proposition 'B must (or cannot) be A,' when we are obliged to consider C implied in B. If, however, we only know as a fact (assertorially) that C is B, then we only know as a fact, likewise, that C is or is not that which we are obliged to think connected or not connected with B.

[1] *Vid. supr.* p. 230.

[2] *Anal. Pr.* i. 2, 3, cf. c. 13, 32, a, 29 sqq. c. 17, 36, b, 15 sqq. ii. 1, 53, a, 3 sqq.

[3] Simple conversion of universal negative and particular affirmative judgments, particular conversion (later so-called *conversio per accidens*) of universal affirmative, and no conversion at all of particular negative judgments — for the *conversio per contrapositionem* was not as yet known to him.

[4] As he himself says, *Soph. El.* c. 34, 183, b, 34, 184, b, 1.

[5] Cf. Prantl, *Gesch. d. Log.* i. 264.

[6] *Anal. Pr.* i. 24. b, 18: συλλογισμὸς δέ ἐστι λόγος ἐν ᾧ τεθέντων τινῶν ἕτερόν τι τῶν κει-

The principle that this process in its simplest form involves no more than two assumptions, or more accurately two judgments, from which a third is derived, and that therefore no syllogistic conclusion can have more than two premisses, is nowhere expressly proved by Aristotle in the beginning of his treatise, though he refers to it later.[1] Now the deduction of a third judgment from two given judgments can only arise out of some bringing into connection of the concepts, which in these given judgments were as yet unconnected.[2] This is impossible, except a mediation be effected between them by another concept connected with both of them.[3] Every syllogism must therefore necessarily contain three concepts, no more and no less,[4] and of these the intermediate is connected in the one premiss with the first and in the other with the third, in such a way as to bring out the connection between the first and third in the con-

μένων ἐξ ἀνάγκης συμβαίνει τῷ ταῦτα εἶναι. (Likewise *Top.* i. 1, 100, a, 25, cf. *Soph. El.* c. 1, 165, a. 1.) λέγω δὲ 'τῷ ταῦτα εἶναι' τὸ διὰ ταῦτα συμβαίνειν, τὸ δὲ 'διὰ ταῦτα συμβαίνειν' τὸ μηδενὸς ἔξωθεν ὅρου προσδεῖν πρὸς τὸ γενέσθαι τὸ ἀναγκαῖον.

[1] *Anal. Pr.* i. 25, 42, a, 32. As regards terminology, the premisses are generally called προτάσεις (*Metaph.* v. 2, 1013, b, 20: ὑποθέσεις τοῦ συμπεράσματος); the minor proposition in *Eth. N.* vi. 12, 1143, b, 3, vii. 5, 1147, b, 9 = ἡ ἑτέρα (or τελευταία) πρότασις; the conclusion invariably = συμπέρασμα. In *Anal. Pr.* ii. 1, 53, a, 17 sqq., however, συμπέρασμα stands for the subject of the conclusion.

[2] A principle which Aristotle does not state in this form, but which follows immediately from his definition of Judgment, if we apply it to the case before us.

[3] Cf. *Anal. Pr.* i. 23, b, 30 sqq., but especially 41, a, 2.

[4] *Anal. Pr.* i. c. 25, *init. Ibid.* 42, b, 1 sqq. on the number of concepts in whole series of syllogisms. Of the three concepts of a syllogism (ὅροι, *vid. supr.* p. 219, n. 1), that which occurs in both premisses is called μέσος; that which comprehends the latter is called the higher or greater (μεῖζον or πρῶτον ἄκρον); that which is comprehended by it, the lower or lesser (ἔλαττον ἄκρον or ἔσχατον), *Anal. Pr.* i. 4, 25, b, 35, 32, 26, a, 21, c. 38 *init.*, and *Anal. Pr.* ii. 23, 68, b.

clusion. But this result may come in three ways. As all judgments consist in the connecting of a subject with a predicate (for Aristotle leaves hypothetical and disjunctive judgments out of his reckoning), and as the connecting of two judgments into a conclusion, or, in other words, the deduction of the conclusion from the premisses, rests upon the relation of the intermediate concept or middle term to the other two, it follows that the mode of the connecting ('the form of the syllogism') will be determined by the way in which the middle term is related to the others.[1] Now there are only three ways possible: the middle term may either be related as subject to the higher and as predicate to the lower concept, or as predicate to both, or as subject to both.[2] Aristotle does not take any direct notice of a fourth possible case, in which it is the subject of the lower and predicate of the higher; but we need not greatly blame him, for this fourth arrangement can

33 sq.; or the major concept is called briefly ἄκρον, and the minor τρίτον.

[1] *Anal. Pr.* i. 23, 41, a, 13, at the end of the section on the syllogistic figures, Aristotle, after having treated of the necessity and significance of the Middle concept as a connecting-link between Major and Minor, continues: εἰ οὖν ἀνάγκη μέν τι λαβεῖν πρὸς ἄμφω κοινόν, τοῦτο δ' ἐνδέχεται (ἢ γὰρ τὸ Α τοῦ Γ καὶ τὸ Γ τοῦ Β κατηγορέσαντας, ἢ τὸ Γ κατ' ἀμφοῖν, ἢ ἄμφω κατὰ τοῦ Γ), ταῦτα δ' ἐστὶ τὰ εἰρημένα σχήματα, φανερὸν ὅτι πάντα συλλογισμὸν ἀνάγκη γίνεσθαι διὰ τούτων τινὸς τῶν σχημάτων. Cf. c. 32, 47, a, 40 sqq., and the searching discussion in UEBERWEG'S *Logik*, § 103, p. 276 sqq.

[2] The position of the propositions has, as we know, no influence on the form of the syllogism. The precedence of the major, customary since then, seemed more natural to Aristotle than to us. In laying down a syllogism, he begins not, as we are accustomed to do, with the subject, but with the predicate of the major: A ὑπάρχει παντὶ τῷ Β, Β ὑπάρχει παντὶ τῷ Γ: so that, even in his form of expression, there is a constant descent from the greater to the middle concept, and from that to the lesser. Cf. UEBERWEG, *loc. cit.* p. 276.

never occur in a single and rigorous chain of reasoning.[1] We obtain, then, three *Figures* (*σχήματα*) which together sum up the categorical syllogism. The so-called fourth figure of later logic[2] is ignored, and neither the hypothetical nor the disjunctive syllogisms are treated of as special forms in any way.[3]

If we ask what syllogisms are possible in these three figures, it is to be observed that every syllogism must contain a universal, and must also contain an affirmative proposition;[4] that the conclusion can only be universal when both the premisses are so;[5] and that in every syllogism at least one of the premisses must resemble

[1] The proof of this cannot be well given here.

[2] Cf. ZELLER, *Ph. d. Gr.* iii. a, 738, 2nd ed.: and consult especially PRANTL, *Gesch. d. Log.* i. 570 sq.

[3] Whether this is a failing or, as PRANTL (*Gesch. d. Log.* i. 295) thinks, an advantage of Aristotelian logic, it is not necessary here to inquire; but when that learned writer, as well as BIESE (*Phil. d. Arist.* i. 155), endeavours to find that Aristotelian account of hypothetical syllogisms, which others miss, in the remarks on supposition-syllogisms (*συλλογισμοὶ ἐξ ὑποθέσεως*) at *Anal. Pr.* i. 23, 40, b, 25, 41, a, 21 sqq. c. 29, 45, b, 22, c. 44, he confounds two different things. Aristotle means by a 'hypothetical syllogism' that which begins with an unproved supposition (cf. WAITZ, on *Anal.* 40, b, 25). We understand by it that of which the major is a hypothetical judgment. And the two classes do not by any means necessarily coincide, for an unproved supposition may be expressed in a categorical proposition, and conversely a hypothetical proposition may be fully demonstrable. The same statement, can, in fact, without changing its meaning, be expressed both categorically and hypothetically. Our modern distinction of categorical and hypothetical propositions regards exclusively the form of the judgment, not the scientific certainty of the proposition.

[4] *Anal. Pr.* i. 24 *init.*: *ἔτι τε ἐν ἅπαντι* [sc. *συλλογισμῷ*] *δεῖ κατηγορικόν τινα τῶν ὅρων εἶναι καὶ τὸ καθόλου ὑπάρχειν.* The former is not further proved, as Aristotle supposes it to be clear from his preceding explanation of the syllogistic figures. By way of proving the second, he proceeds: *ἄνευ γὰρ τοῦ καθόλου ἢ οὐκ ἔσται συλλογισμὸς, ἢ οὐ πρὸς τὸ κείμενον, ἢ τὸ ἐξ ἀρχῆς αἰτήσεται* which will be explained in detail in what follows *infra*.

[5] *Loc. cit.* 41. b, 23.

the conclusion, both as to its quality and also as to its modality.[1] Yet Aristotle has nowhere deduced these rules on general principles from the nature of the syllogistic method. They are merely generalisations from his observation of the various forms of syllogism themselves. This analysis, however, he carries out with very great care. He is not satisfied with proving the well-known *moods* for the three figures,[2] but he also investigates minutely the influence which the modality of the premisses in pure and in mixed syllogisms must exercise upon the conclusion and upon the whole syllogistic process.[3] He regards the syllogisms of the first figure alone as perfect,' because, according to his view, they alone immediately reveal the necessity of the syllogistic sequence. Both the others yield 'imperfect' syllogisms, and require to be completed through the first. Their demonstrative value rests upon and is proved by the fact that they can be reduced to the first figure, either apagogically or by conversion.[4] These syllogistic forms are of course employed in the *reductio ad impossibile*, as well as in 'hypothetical' arguments generally.[5]

[1] *Loc. cit.* l. 27.

[2] For the first figure (to use the Scholastic designations) the moods: *Barbara*, *Darii*, *Celarent*, *Ferio* (*Anal. Pr.* i. 4); for the second: *Cesare*, *Camestres*, *Festino*, *Baroco* (*ibid.* c. 5); for the third: *Darapti*, *Felapton*, *Disamis*, *Datisi*, *Bocardo*, *Fresison* (c. 6).

[3] *Anal. Pr.* i. c. 8–23; cf. the discussion in n. 1 to p. 234, *supra*.

[4] See the sections cited, especially c. 4 *fin.*, c. 5 *fin.*, c. 6 *fin.*, c. 7, 29, a, 30, b, 1 sqq., c. 23, cf. c. 1, 24, b, 22: *τέλειον μὲν οὖν καλῶ συλλογισμὸν τὸν μηδενὸς ἄλλου προσδεόμενον παρὰ τὰ εἰλημένα πρὸς τὸ φανῆναι τὸ ἀναγκαῖον, ἀτελῆ δὲ τὸν προσδεόμενον ἢ ἑνὸς ἢ πλειόνων, ἃ ἔστι μὲν ἀναγκαῖα διὰ τῶν ὑποκειμένων ὅρων οὐ μὴν εἴληπται διὰ προτάσεων.* It is not necessary here to defend Aristotle's view.

[5] *Ibid.* c. 23, 41, a, 21 sqq.; cf. *supra*, p. 238, n. 1.

With equal fulness does Aristotle set forth rules for the proper treatment of these forms in scientific use, and the errors to be avoided. He shows in the first instance what kind of propositions are more difficult to prove but more easy to confute, and *vice versa*.[1] Next he provides rules for the discovery of the fitting premisses, having regard to the quality and quantity of the conclusion to be proved,[2] and in doing so he takes occasion to censure [3] in passing the Platonic method of division.[4] On this head he treats minutely of the rules and methods which must be observed in order to reduce the materials of proof so discovered to the exact syllogistic form.[5] Furthermore he discusses the capacity of syllogisms in relation to the comprehension of their contents;[6] the syllogisms giving true conclusions from false premisses;[7] the *circulus in argu-*

[1] *Ibid.* c. 26.

[2] *Ibid.* c. 27–29, here also (c. 29) with express application to apagogic and supposition-syllogisms.

[3] To seek to define concepts by means of continuous divisions, he says (c. 31), is of no use; we have then to suppose the chief point that is to be proved. When it is a question of the concept of man as a ζῷον θνητὸν, then, he says, from the propositions 'All living beings are either mortal or immortal; man is a living being,' it would only follow that man is either mortal or immortal: that he is a ζῷον θνητὸν is a mere postulate. Hence Aristotle says of division, that it is οἷον ἀσθενὴς [not valid] συλλογισμός. Similarly in *Anal. Post.* ii. 5. Also in *Part. An.* i. 2 sq., the Platonic method is blamed because (contrary to the rule given at p. 216, n. 1) it multiplies unnecessarily the intermediate divisions, introduces the same thing under different genera, gives negative qualities, divides from all kinds of opposite points of view, &c. Cf. MEYER, *Arist. Thierkunde*, 71 sqq.

[4] See ZELL. *Ph. d. Gr.* pt. i. 523 sqq.

[5] *Loc. cit.* c. 32–46.

[6] *Anal. Pr.* ii. 1.

[7] *Ibid.* c. 2 *init.* (cf. *Top.* viii. 11 sq., 162, a, 9, b, 13): ἐξ ἀληθῶν μὲν οὖν οὐκ ἔστι ψεῦδος συλλογίσασθαι, ἐκ ψευδῶν δ' ἔστιν ἀληθὲς, πλὴν οὐ διότι ἀλλ' ὅτι· τοῦ γὰρ διότι οὐκ ἔστιν ἐκ ψευδῶν συλλογισμός (because false premisses give the ground itself, the διότι, falsely; cf. *supra*, p. 173, n. 2). Under what

*endo*;[1] the 'conversion' of the syllogism;[2] the *Reductio ad absurdum*;[3] syllogisms which result from the conversion of premisses into their opposites,[4] together with the various syllogistic fallacies and the means of meeting them.[5] Lastly he inquires into those kinds of proof which do not arise by *demonstration*, in the strict sense of the word,[6] and establishes the method of argument peculiar to each.[7] We cannot at this point

conditions this is possible in the different figures, is discussed in c. 2–4.

[1] Τὸ κύκλῳ καὶ ἐξ ἀλλήλων δείκνυσθαι. This consists in the conclusion of a syllogism (which, however, must of course be shown to be true from other sources) being used in conjunction with the converse of one premiss to prove the other. For the cases where this is possible, see *loc. cit.* c. 5–7. Against 'the vicious circle' in argument, see *Anal. Post.* i. 3, 72, b, 25.

[2] The destruction of one premiss by the other in conjunction with the contradictory or contrary of the conclusion; *loc. cit.* c. 8–10.

[3] The *Reductio ad absurdum*, ὁ διὰ τοῦ ἀδυνάτου συλλογισμός, c. 11–14, cf. *Top.* viii. 2, 157, b, 34, c. 12, 162, b, 5, and *Anal. Post.* i. 26, where it is remarked that direct proof is of greater scientific value.

[4] *Loc. cit.* c. xv.

[5] The *petitio principii* (τὸ ἐν ἀρχῇ αἰτεῖσθαι), c. 16, cf. *Top.* viii. 13; the μὴ παρὰ τοῦτο συμβαίνειν τὸ ψεῦδος, c. 17; the πρῶτον ψεῦδος, c. 18, cf. *Top.* viii. 10; rules for disputation deduced from this, c. 19, sq.; on deception by too hasty suppositions, c. 21; on proving certain suppositions by the transposition of the propositions in a syllogism, c. 22.

[6] Induction, c. 23; example, c. 24 (cf. *Anal. Post.* i. 1, 71, a, 9; *Rhet.* i. 2, 1356, b, 2, 1357, b, 25, ii. 20); ἀπαγωγή (reduction of one problem to another more easy to solve), c. 25; objection (ἔνστασις), c. 26; the syllogism from the probable (εἰκός) or certain marks (σημεῖα), which Aristotle calls the 'Enthymeme,' c. 27. The most important of these is 'Induction,' which we shall discuss later on. It consists in the major proposition being proved by the minor and the conclusion. *E.g.*, we may prove apodictically 'All animals which have little gall are long-lived; man, the horse &c. have little gall, and are therefore long-lived;' but the inductive proof will go thus: 'Man, the horse &c., are long-lived; man &c. have little gall; therefore animals which have little gall are long-lived.' This, however, only applies when the minor concept ('animals which have little gall') has an equal extension with the middle concept ('man &c.'), and when the minor proposition ('man &c. have little gall') can be simply transposed, so that in its place 'the animals which have little gall are man &c.' can be put (*loc. cit.* c. 23).

[7] See for a fuller discussion of these points, PRANTL, p. 299–

follow him into these researches, although we undoubtedly owe much to them in the application of the syllogistic method, and though they prove most clearly the care with which the great logician worked out its many-sided detail.

The syllogistic system forms the foundation upon which Aristotle built the theory of Scientific Proof, which he set out in the second *Analytics*. All proof is syllogistic, but not every syllogism is proof. It is only the *Scientific Syllogism* which deserves this name.[1] Science consists in the cognition of causes, and the cause of a phenomenon is that from which it of necessity arises.[2] Proof, therefore, and apprehension by means of proof are only possible when something is explained from its original causes.[3] Nothing can be the subject of proof except that which is necessary. Proof is a conclusion from necessary premisses.[4] That which is ordinarily (though not without exception) true can be

321.—In the selection and sequence of the different sections no strict order is observed, although related subjects are put together. On the division of the *Prior Analytics* as a whole, see BRANDIS, p. 204 sq., 219 sq.

[1] *Anal. Post.* i. 2, 71, b, 18: ἀπόδειξιν δὲ λέγω συλλογισμὸν ἐπιστημονικόν. And after giving the requisites for such an argument, he adds: συλλογισμὸς μὲν γὰρ ἔσται καὶ ἄνευ τούτων, ἀπόδειξις δ' οὐκ ἔσται· οὐ γὰρ ποιήσει ἐπιστήμην.

[2] *Loc. cit.* c. 2 *init.*: ἐπίστασθαι δὲ οἰόμεθ' ἕκαστον ἁπλῶς . . . ὅταν τήν τ' αἰτίαν οἰώμεθα γνώσκειν δι' ἣν τὸ πρᾶγμά ἐστιν, ὅτι ἐκείνου αἰτία ἐστὶ, καὶ μὴ ἐνδέχεσθαι τοῦτ' ἄλλως ἔχειν. Further references in support of this, *supra*, p. 163, n. 3.

[3] *Ibid.* 71, b, 19: εἰ τοίνυν ἐστὶ τὸ ἐπίστασθαι οἷον ἔθεμεν, ἀνάγκη καὶ τὴν ἀποδεικτικὴν ἐπιστήμην ἐξ ἀληθῶν τ' εἶναι καὶ πρώτων καὶ ἀμέσων [about this below] καὶ γνωριμωτέρων καὶ προτέρων τοῦ συμπεράσματος· οὕτω γὰρ ἔσονται καὶ αἱ ἀρχαὶ οἰκεῖαι τοῦ δεικνυμένου. *Ibid.* line 29: αἴτιά τε . . . δεῖ εἶναι [*sc.* that from which a proof is deduced] . . . ὅτι τότε ἐπιστάμεθα ὅταν τὴν αἰτίαν εἰδῶμεν.

[4] *Ibid.* c. 4 *init.*: ἐπεὶ δ' ἀδύνατον ἄλλως ἔχειν οὗ ἐστὶν ἐπιστήμη ἁπλῶς, ἀναγκαῖον ἂν εἴη τὸ ἐπιστητὸν τὸ κατὰ τὴν ἀποδεικ-

included under matters of proof only in a limited sense.[1] On the other hand, the contingent cannot be proved—cannot even be known scientifically.[2] And since necessary truth is that only which proceeds from the essence and the idea of the subject, while everything else is contingent, so it may be said that all proof relates to and is founded exclusively upon the essential characteristics of things, and that the concept of each thing is at once its starting-point and goal.[3] The purer and more perfect the information, therefore, which any form of Proof secures to us concerning the *conceptual nature* and the causes of an object, the higher is the kind of knowledge which it warrants; and so, other things being equal, a universal proof ranks above a particular, a positive proof above a negative, a direct above an apagogic, one which enables us to know the cause above that which merely instructs us in the fact.[4]

τικὴν ἐπιστήμην. ἀποδεικτικὴ δ' ἐστὶν ἣν ἔχομεν τῷ ἔχειν ἀπόδειξιν· ἐξ ἀναγκαίων ἄρα συλλογισμός ἐστιν ἡ ἀπόδειξις. Cf. note 3 *infra*.

[1] *Metaph*. xi. 8, 1065, a, 4: ἐπιστήμη μὲν γὰρ πᾶσα τοῦ ἀεὶ ὄντος ἢ ὡς ἐπὶ τὸ πολὺ, τὸ δὲ συμβεβηκὸς ἐν οὐδετέρῳ τούτων ἐστίν. *Anal. Post*. i. 30: πᾶς γὰρ συλλογισμὸς ἢ δι' ἀναγκαίων ἢ διὰ τῶν ὡς ἐπὶ τὸ πολὺ προτάσεων· καὶ εἰ μὲν αἱ προτάσεις ἀναγκαῖαι, καὶ τὸ συμπέρασμα ἀναγκαῖον, εἰ δ' ὡς ἐπὶ τὸ πολὺ, καὶ τὸ συμπέρασμα τοιοῦτον. Cf. p. 168, n. 1.

[2] *Anal. Post*. i. 6, 75, a, 18, c. 30; cf. c. 8, c. 33, &c.; *vid. supra*, p. 164, n. 2.

[3] *Ibid*. c. 6 *init*.: εἰ οὖν ἐστὶν ἡ ἀποδεικτικὴ ἐπιστήμη ἐξ ἀναγκαίων ἀρχῶν (ὃ γὰρ ἐπίσταται οὐ δυνατὸν ἄλλως ἔχειν) τὰ δὲ καθ' αὑτὰ ὑπάρχοντα ἀναγκαῖα τοῖς πράγμασιν . . . φανερὸν ὅτι ἐκ τοιούτων τινῶν ἂν εἴη ὁ ἀποδεικτικὸς συλλογισμός· ἅπαν γὰρ ἢ οὕτως ὑπάρχει ἢ κατὰ συμβεβηκὸς, τὰ δὲ συμβεβηκότα οὐκ ἀναγκαῖα. *Ibid*. at the end: ἐπεὶ δ' ἐξ ἀνάγκης ὑπάρχει περὶ ἕκαστον γένος ὅσα καθ' αὑτὰ ὑπάρχει καὶ ᾗ ἕκαστον, φανερὸν ὅτι περὶ τῶν καθ' αὑτὰ ὑπαρχόντων αἱ ἐπιστημονικαὶ ἀποδείξεις καὶ ἐκ τῶν τοιούτων εἰσίν. τὰ μὲν γὰρ συμβεβηκότα οὐκ ἀναγκαῖα, ὥστ' οὐκ ἀνάγκη τὸ συμπέρασμα εἰδέναι διότι ὑπάρχει, οὐδ' εἰ ἀεὶ εἴη, μὴ καθ' αὑτὸ δὲ, οἷον οἱ διὰ σημείων συλλογισμοί. τὸ γὰρ καθ' αὑτὸ οὐ καθ' αὑτὸ ἐπιστήσεται, οὐδὲ διότι. τὸ δὲ διότι ἐπίστασθαι ἔστι τὸ διὰ τοῦ αἰτίου ἐπίστασθαι. δι' αὑτὸ ἄρα δεῖ καὶ τὸ μέσον τῷ τρίτῳ καὶ τὸ πρῶτον τῷ μέσῳ ὑπάρχειν. Cf. p. 213, n. 5 *supra*.

[4] *Anal. Post*. i. 14, c. 24-27.

If we take demonstration as a whole, and consider the building up of a scientific system, it is an axiom that the knowledge of the universal must precede that of the particular.[1] The same considerations lead up from another point of view to a principle which is deeply rooted in Aristotle's whole way of thinking: that nothing can be demonstrated except from its own peculiar principles, and that it is inadmissible to borrow proofs from without. Demonstration, he thinks, should start from the essential characteristics of the object in question, and any properties which belong to another genus can only accidentally attach to it, seeing that they form no part of its concept.[2] All demonstration, consequently, hinges on the concept of the thing. Its problem consists in determining, not only the properties which attach to any object by virtue of the conception of it, but also the media by which they are attached to it. Its function is to deduce the particular from the universal, phenomena from their causes.

Is this process of 'mediation' unending, or has it a necessary limit? Aristotle takes the latter alternative, from three points of view.

[1] *Phys.* iii. 1, 200, b, 24: ὑστέρα γὰρ ἡ περὶ τῶν ἰδίων θεωρία τῆς περὶ τῶν κοινῶν ἐστίν.

[2] *Anal. Post.* i. 7 *init.*: οὐκ ἄρα ἔστιν ἐξ ἄλλου γένους μεταβάντα δεῖξαι, οἷον τὸ γεωμετρικὸν ἀριθμητικῇ. τρία γάρ ἐστι τὰ ἐν ταῖς ἀποδείξεσιν, ἓν μὲν τὸ ἀποδεικνύμενον τὸ συμπέρασμα· τοῦτο δ' ἐστὶ τὸ ὑπάρχον γένει τινὶ καθ' αὑτό. ἓν δὲ τὰ ἀξιώματα· ἀξιώματα δ' ἐστὶν ἐξ ὧν [sc. αἱ ἀποδείξεις εἰσίν]. τρίτον τὸ γένος τὸ ὑποκείμενον, οὗ τὰ πάθη καὶ τὰ καθ' αὑτὸ συμβεβηκότα δηλοῖ ἡ ἀπόδειξις. ἐξ ὧν μὲν οὖν ἡ ἀπόδειξις, ἐνδέχεται τὰ αὐτὰ εἶναι· ὧν δὲ τὸ γένος ἕτερον, ὥσπερ ἀριθμητικῆς καὶ γεωμετρίας, οὐκ ἔστι τὴν ἀριθμητικὴν ἀπόδειξιν ἐφαρμόσαι ἐπὶ τὰ τοῖς μεγέθεσι συμβεβηκότα . . . ὥστ' ἢ ἁπλῶς ἀνάγκη τὸ αὐτὸ εἶναι γένος ἢ πῇ, εἰ μέλλει ἡ ἀπόδειξις μεταβαίνειν. ἄλλως δ' ὅτι ἀδύνατον, δῆλον· ἐκ γὰρ τοῦ αὐτοῦ γένους ἀνάγκη τὰ ἄκρα καὶ τὰ μέσα εἶναι. εἰ γὰρ μὴ καθ' αὑτά, συμβεβηκότα ἔσται. διὰ τοῦτο . . . οὐκ ἔστι δεῖξαι . . . ἄλλῃ ἐπιστήμῃ τὸ ἑτέρας, ἀλλ' ἢ ὅσα οὕτως ἔχει πρὸς ἄλληλα ὥστ' εἶναι θάτερον ὑπὸ θάτερον; c.

We may rise from the particular to the general—from the subject, beyond which there is nothing of which it can be predicated—to continually higher predicates: and we may, on the other hand, descend from the most universal point—from that predicate which is the subject of no other predicate—down to the particular. But in any case we must arrive eventually at a point where this progression ceases, otherwise we could never reach an effectual demonstration or definition.[1] The argument excludes also the third hypothesis, that there may exist an infinite number of intermediate terms between a definite subject and a definite predicate.[2] If the list of middle terms is not infinite, it follows that there are things of which there cannot be a demonstration or derived knowledge.[3] For wherever the middle terms cease, immediate knowledge must necessarily take the place of demonstration. To demonstrate *everything* is not possible. If we attempt it we are either brought round again to that progression *ad infinitum* already mentioned, which annuls all possibility of knowledge and Proof, or else to 'arguing in a circle,' which is equally incapable of producing a solid demonstration.[4] There remains, therefore, but one

9 *init.*: φανερὸν ὅτι ἕκαστον ἀποδεῖξαι οὐκ ἔστιν ἀλλ' ἢ ἐκ τῶν ἑκάστου ἀρχῶν, &c. We return to this later on.

[1] For he says at 83, b, 6, 84, a, 3: τὰ ἄπειρα οὐκ ἔστι διεξελθεῖν νοοῦντα. Cf. note 4 *infra*.

[2] *Ibid.* ch. 19–22. The details of this treatment, in parts not very clear, cannot well be repeated here. We have already seen at p. 222, n, 2, that Aristotle supposes a limit to the number of concepts above as well as below.

[3] Ch. 22, 84, a, 30; and so *Metaph.* iii. 2, 997, a, 7: περὶ πάντων γὰρ ἀδύνατον ἀπόδειξιν εἶναι· ἀνάγκη γὰρ ἔκ τινων εἶναι καὶ περί τι καὶ τινῶν τὴν ἀπόδειξιν.

[4] After Aristotle (*Anal. Post.* i. 2) has shown that the proof-power of syllogisms is conditional on the scientific knowledge of the premisses, he continues, in ch. 3:

conclusion, that in the last resort demonstration must start from propositions which, by reason of their *immediate certainty*, neither admit nor stand in need of proof.[1] These 'principles' of all proof[2] must possess

'Many conclude from this, that no knowledge at all is possible; others, that everything can be proved.' But he confutes both assertions. Of the former he says: *οἱ μὲν γὰρ ὑποθέμενοι μὴ εἶναι ὅλως ἐπίστασθαι, οὗτοι εἰς ἄπειρον ἀξιοῦσιν ἀνάγεσθαι ὡς οὐκ ἂν ἐπισταμένους τὰ ὕστερα διὰ τὰ πρότερα, ὧν μή ἐστι πρῶτα, ὀρθῶς λέγοντες, ἀδύνατον γὰρ τὰ ἄπειρα διελθεῖν. εἴ τε ἵστανται καὶ εἰσὶν ἀρχαί, ταύτας ἀγνώστους εἶναι ἀποδείξεώς γε μὴ οὔσης αὐτῶν, ὅπερ φασὶν εἶναι τὸ ἐπίστασθαι μόνον· εἰ δὲ μὴ ἔστι τὰ πρῶτα εἰδέναι, οὐδὲ τὰ ἐκ τούτων εἶναι ἐπίστασθαι ἁπλῶς οὐδὲ κυρίως, ἀλλ' ἐξ ὑποθέσεως, εἰ ἐκεῖνά ἐστιν.* He admits that what is deduced would not be *known* if the principles (ἀρχαί) are not *known*, and that if mediate knowledge, by way of proof, is the only *knowledge*, then there can be no knowledge of ἀρχαί. Yet he himself in the same treatise denies this very thing at p. 72, b, 18; cf. *Metaph.* iv. 4, 1006, a, 6: *ἔστι γὰρ ἀπαιδευσία τὸ μὴ γιγνώσκειν, τίνων δεῖ ζητεῖν ἀπόδειξιν καὶ τίνων οὐ δεῖ· ὅλως μὲν γὰρ ἁπάντων ἀδύνατον ἀπόδειξιν εἶναι· εἰς ἄπειρον γὰρ ἂν βαδίζοι, ὥστε μηδ' οὕτως εἶναι ἀπόδειξιν.* As to the second of the above propositions, Aristotle states it at p. 72, b, 16, in other words—*πάντων εἶναι ἀπόδειξιν οὐδὲν κωλύειν· ἐνδέχεσθαι γὰρ κύκλῳ γίνεσθαι τὴν ἀπόδειξιν καὶ ἐξ ἀλλήλων*—and then at ll. 25 sqq. of the same page he goes on to refute it by reference to his earlier exposition on the subject of 'reasoning in a circle' (*de quo v. supra*, p. 242, n. 1).

[1] *Anal. Post.* c. 2, 71, b, 20: *ἀνάγκη καὶ τὴν ἀποδεικτικὴν ἐπιστήμην ἐξ ἀληθῶν τ' εἶναι καὶ πρώτων καὶ ἀμέσων καὶ γνωριμωτέρων καὶ προτέρων καὶ αἰτίων τοῦ συμπεράσματος. . . . ἐκ πρώτων δ' ἀναποδείκτων, ὅτι οὐκ ἐπιστήσεται μὴ ἔχων ἀπόδειξιν αὐτῶν* [because otherwise if they were not *ἀναπόδεικτοι* we could, likewise, only know them by proof]; *τὸ γὰρ ἐπίστασθαι ὧν ἀπόδειξίς ἐστι μὴ κατὰ συμβεβηκὸς, τὸ ἔχειν ἀπόδειξίν ἐστιν.* c. 3, 72, b, 18: *ἡμεῖς δέ φαμεν οὔτε πᾶσαν ἐπιστήμην ἀποδεικτικὴν εἶναι, ἀλλὰ τὴν τῶν ἀμέσων ἀναπόδεικτον. . . . καὶ οὐ μόνον ἐπιστήμην ἀλλὰ καὶ ἀρχὴν ἐπιστήμης εἶναί τινά φαμεν, ᾗ τοὺς ὅρους γνωρίζομεν.* Cf. *supra*, p. 197, n. 6, and 210, n. 2, 179, n. 4, and 210, n. 2 *fin.* On the other hand, the circumstance that a thing is always so is no reason for rejecting proof by causes, for even the eternal may have its causes on which it is conditional; see *Gen. An.* ii. 6, 742, b, 17 sqq.

[2] *Ἀρχαί, ἀρχαὶ ἀποδείξεως, ἀρχαὶ συλλογιστικαί, ἀ. ἄμεσοι, προτάσεις ἄμεσοι*, *Anal. Post.* 72, a, 7, 14, c. 10 *init.* (*λέγω δ' ἀρχὰς ἐν ἑκάστῳ γένει ταύτας, ἃς ὅτι ἔστι μὴ ἐνδέχεται δεῖξαι*); ii. 19, 99, b, 21, cf. p. 197, n. 4; *Gen. An.* ii. 6, 742, b, 29 sqq.; *Metaph.* v. 1, 1013, a, 14, iii. 1, 2, 995, b, 28, 996, b, 27, iv. 3, and also cf. *Ind.*

even a higher certainty than anything deduced from them.[1] Consequently, the soul must contain a faculty of immediate knowledge higher and more sure than any mediate cognition. And, in fact, Aristotle finds in the *Nous*—the pure reason—just such a faculty; and he maintains that it never deceives itself, that in every case it either *has* its object or has it *not*, but never has it in a *false* or illusive way.[2]

Yet it must be admitted that he has neither proved the possibility nor the infallibility of any such knowledge. This immediate certainty, he says, is of two kinds. There are three elements in every process of demonstration: that which is proved, the principles from which it is proved,[3] and the object of which it is proved. The first of these is not matter of immediate knowledge, for it is deduced from the other two. These, again, are themselves distinguished in this way, that the axioms are common to different fields of knowledge, but the postulates relating to the special

*Arist.* 111, b, 58 sqq. In *Anal. Post.* i. 2, 72, a, 14, Aristotle proposes to call the unproved premiss of a syllogism θέσις, if it refers to a particular fact, ἀξίωμα if it expresses a universal presupposition of all proof. Again, if a θέσις contains an affirmation as to the existence or non-existence of an object, it is a ὑπόθεσις; if otherwise, a ὁρισμός. Θέσις is used in a broader meaning in *Anal. Pr.* ii. 17, 65, b, 13, 66, a, 2, and *Anal. Post.* i. 3, 73, a, 9; in a narrower one in *Top.* i. 11, 104, b, 19, 35. (For further references see *Ind. Ar.* 327, b, 18 sqq.)—For ἀξίωμα, which is also used in a wider sense, see *Anal. Post.* i. 7, 75, a, 41, c. 10, 76, b, 14, and *Metaph.* iii. 2, 997, a, 5, 12.—Αἴτημα is distinguished from ὑπόθεσις in *Anal. Post.* i. 10, 76, b, 23 sqq.

[1] *Anal. Post.* i. 2, 72, a, 25 sqq.; cf. p. 247, n. 1.

[2] *Vide supra*, p. 197 sqq., where Aristotle's view of this 'immediate knowledge' is explained.

[3] *Anal. Post.* i. 7 (as cited *supra*, p. 245, n. 3), and *ibid.* ch. 10, 76, b, 10: πᾶσα γὰρ ἀποδεικτικὴ ἐπιστήμη περὶ τρία ἐστὶν, ὅσα τε εἶναι τίθεται (ταῦτά δ' ἐστι τὸ γένος οὗ τῶν καθ' αὑτὰ παθημάτων ἐστὶ θεωρητική), καὶ τὰ λεγόμενα κοινὰ

matter are peculiar to the particular science.[1] It is only upon postulates which are proper to a particular department that he allows a binding demonstration to be founded.[2] But these postulates are just as little capable as the universal axioms of being deduced from a higher law.[3] They must be supplied to us by our knowledge of that particular object to which they relate.[4] They are therefore matter of observation—of experience.[5] How such an experience could come to

ἀξιώματα ἐξ ὧν πρώτων ἀποδείκνυσι, καὶ τρίτον τὰ πάθη . . . τρία ταῦτά ἐστι, περὶ ὅ τε δείκνυσι καὶ ἃ δείκνυσι καὶ ἐξ ὧν. *Metaph.* iii. 2, 997, a, 8: ἀνάγκη γὰρ ἔκ τινων εἶναι καὶ περί τι καὶ τινῶν τὴν ἀπόδειξιν. In ch. 6 he gives γένος ὑποκείμενον, πάθη, ἀξιώματα in another order.

[1] *Anal. Post.* i. 7, *cit. supr.* p. 245, n. 3, and *ibid.* c. 10, 76, a, 37: ἔστι δ' ὧν χρῶνται ἐν ταῖς ἀποδεικτικαῖς ἐπιστήμαις τὰ μὲν ἴδια ἑκάστης ἐπιστήμης τὰ δὲ κοινά . . . ἴδια μὲν οἷον γραμμὴν εἶναι τοιανδὶ καὶ τὸ εὐθύ, κοινὰ δὲ οἷον τὸ ἴσα ἀπὸ ἴσων ἂν ἀφελῃ ὅτι ἴσα τὰ λοιπά. c. 32 *init.*: τὰς δ' αὐτὰς ἀρχὰς ἁπάντων εἶναι τῶν συλλογισμῶν ἀδύνατον, and after this has been proved at length he says at the end: αἱ γὰρ ἀρχαὶ διτταί, ἐξ ὧν τε καὶ περὶ ὅ· αἱ μὲν οὖν ἐξ ὧν κοιναί, αἱ δὲ περὶ ὃ ἴδιαι, οἷον ἀριθμός, μέγεθος. More about the ἀποδεικτικαὶ ἀρχαὶ or the κοιναὶ δόξαι ἐξ ὧν ἅπαντες δεικνύουσιν will be found in the passages cited at p. 247, n. 2.

[2] *Vid. supr.* p. 245, n. 3; *Gen. An.* ii. 8, 748, a, 7: οὗτος μὲν οὖν ὁ λόγος καθόλου λίαν καὶ κενός. οἱ γὰρ μὴ ἐκ τῶν οἰκείων ἀρχῶν λόγοι κενοί, ἀλλὰ δοκοῦσιν εἶναι τῶν πραγμάτων οὐκ ὄντες. Cf. p. 174, n. 2, *supra.*

[3] *Anal. Post.* i. 9, 76, a, 16 (following on the passage cited *supra*, p. 245, n. 3,): εἰ δὲ φανερὸν τοῦτο, φανερὸν καὶ ὅτι οὐκ ἔστι τὰς ἑκάστου ἰδίας ἀρχὰς ἀποδεῖξαι· ἔσονται γὰρ [for there *would* be] ἐκεῖναι ἁπάντων ἀρχαὶ καὶ ἐπιστήμη ἡ ἐκείνων κυρία πάντων. Cf. ch. 10, cited p. 248, n. 3 *supra.*

[4] *Anal. Pr.* i. 30, 46, a, 17: ἴδιαι δὲ καθ' ἑκάστην [ἐπιστήμην] αἱ πλεῖσται [ἀρχαὶ τῶν συλλογισμῶν]. διὸ τὰς μὲν ἀρχὰς τὰς περὶ ἕκαστον ἐμπειρίας ἐστὶ παραδοῦναι. λέγω δ' οἷον τὴν ἀστρολογικὴν μὲν ἐμπειρίαν τῆς ἀστρολογικῆς ἐπιστήμης. ληφθέντων γὰρ ἱκανῶς τῶν φαινομένων οὕτως εὑρέθησαν αἱ ἀστρολογικαὶ ἀποδείξεις. So in *Hist. An.* i. 7 *init.*: we have first to describe the peculiar properties of animals, and then to discuss their causes: οὕτω γὰρ κατὰ φύσιν ἐστὶ ποιεῖσθαι τὴν μέθοδον, ὑπαρχούσης τῆς ἱστορίας τῆς περὶ ἕκαστον· περὶ ὧν τε γὰρ καὶ ἐξ ὧν εἶναι δεῖ τὴν ἀπόδειξιν, ἐκ τούτων γίνεται φανερόν.

[5] Cf. preceding note, and the remark in *Eth.* vi. 9, 1142, a, 11 sqq., that young people can make advances in the knowledge of Mathematics, but not in Natural History or the wisdom of life, ὅτι τὰ μὲν [Mathematics] δι' ἀφαιρέσεώς ἐστιν [is an abstract

pass, he does not further inquire. Sense-perception he treats as a simple datum, whose elements he does not try to analyse. He even includes cases which are to us merely judgments upon given materials, among what he calls immediate certainties.[1] It is therefore impossible to give a clear and sufficient account of the faculties to which, according to him, we are indebted for the immediate truths in question.[2]

To enumerate the special presuppositions of all the various sciences is also obviously impossible. Even a general view of the universal axioms is not to be found

science], *τῶν δ' αἱ ἀρχαὶ ἐξ ἐμπειρίας*.

[1] It is said in *Eth.* iii. 5, 1112, b, 33, that practical reflection (*βούλευσις*) is concerned with *τὰ καθ' ἕκαστα, οἷον εἰ ἄρτος τοῦτο ἢ πέπεπται ὡς δεῖ· αἰσθήσεως γὰρ ταῦτα*. *Ibid.* vi. 9, 1142, a, 23 sqq., Aristotle explains that, in contradiction to *ἐπιστήμη*, *φρόνησις* is, like *νοῦς*, an immediate knowledge; but whilst the latter is concerned with the *ὅροι, ὧν οὐκ ἔστι λόγος* (the 'highest principles,' which in this case are practical principles), *φρόνησις* is a knowledge *τοῦ ἐσχάτου, οὗ οὐκ ἔστιν ἐπιστήμη ἀλλ' αἴσθησις, οὐχ ἡ τῶν ἰδίων* [the sensible properties of things] *ἀλλ' οἵᾳ αἰσθανόμεθα, ὅτι τὸ ἐν τοῖς μαθηματικοῖς ἔσχατον τρίγωνον* (*i.e.* the last thing obtained in analysing a figure is a triangle). Here, therefore, the judgment 'This is a triangle' is explained as a matter of *αἴσθησις* (and so also in *Anal. Post.* i. 1, 71, a, 20) and the minor premisses of practical syllogisms, such as 'This deed is just,' 'This is useful,' &c., are referred to an *αἴσθησις* in like manner. (See also the discussion of *φρόνησις* in ch. xii. *infra*.) So in *Eth.* iii. 12, 1143, b, 5, referring to the same class of propositions he says: *τούτων οὖν ἔχειν δεῖ αἴσθησιν, αὕτη δ' ἐστὶ νοῦς*. Now, although (as is indicated in c. 9 *fin.*) *αἴσθησις* is here to be taken as in *Polit.* i. 2, 1253, a, 17, in the wider signification of 'consciousness,' still it always means an 'immediate knowledge,' as distinguished from an *ἐπιστήμη*. KAMPE (*Erkenntnissl. d. Ar.* 220 sq.) finds in the above passages, a proof that Book VI. of the *Nicomachean Ethics* originally belonged to the *Eudemian*; but *Polit.* i. 2, shows how unfounded is this conclusion. As little does it follow from *Eth.* vi. 3, 1139, b, 33—where the *εἰ μὲν γάρ πως πιστεύῃ*, &c., does not mean 'we have knowledge when we have *any* conviction,' but 'knowledge consists in *a definite kind* of conviction based on known principles.'

[2] For proof of this, see ch. xii. *infra*.

in Aristotle. He merely seeks to determine which of all principles is the most incontestable, obvious, and unconditional,[1] so that it can involve no possible error. This he finds in the Law of Contradiction.[2] No one can seriously doubt this principle, though many may pretend to do so; but just because it is the highest principle of all, it admits of no demonstration—it cannot, that is to say, be deduced from any higher law. It is certainly possible to defend it against objections of every kind, by showing either that they rest upon misunderstandings, or that they themselves presuppose the axiom in question and destroy themselves in attacking it.[3] He has, however, carefully guarded against any

[1] *Metaph.* iv. 3, 1005, b, 11: *βεβαιοτάτη δ' ἀρχὴ πασῶν περὶ ἣν διαψευσθῆναι ἀδύνατον· γνωριμωτάτην τε γὰρ ἀναγκαῖον εἶναι τὴν τοιαύτην (περὶ γὰρ ἃ μὴ γνωρίζουσιν ἀπατῶνται πάντες) καὶ ἀνυπόθετον. ἣν γὰρ ἀναγκαῖον ἔχειν τὸν ὁτιοῦν ξυνιέντα τῶν ὄντων, τοῦτο οὐχ ὑπόθεσις.*

[2] Line 19 (xi. 5 *init.*): *τὸ γὰρ αὐτὸ ἅμα ὑπάρχειν τε καὶ μὴ ὑπάρχειν ἀδύνατον τῷ αὐτῷ καὶ κατὰ τὸ αὐτό· καὶ ὅσα ἄλλα προσδιορισαίμεθ' ἄν, ἔστω προσδιωρισμένα πρὸς λογικὰς δυσχερείας. αὕτη δὴ πασῶν ἐστι βεβαιοτάτη τῶν ἀρχῶν.* The axiom that 'opposites cannot belong to the same thing in the same respect, is only a form of this. And the further principle that 'no one can really ascribe such opposites at once to anything' is so closely connected that sometimes the latter is proved from the former, at other times the former from the latter; cf. *Anal. Post.*, *ut supra*, line 26: *εἰ δὲ μὴ ἐνδέχεται ἅμα ὑπάρχειν τῷ αὐτῷ τἀναντία (προσδιωρίσθω δ' ἡμῖν καὶ ταύτῃ τῇ προτάσει τὰ εἰωθότα), ἐναντία δ' ἐστὶ δόξα δόξῃ ἡ τῆς ἀντιφάσεως, φανερὸν ὅτι ἀδύνατον ἅμα ὑπολαμβάνειν τὸν αὐτὸν εἶναι καὶ μὴ εἶναι τὸ αὐτό· ἅμα γὰρ ἂν ἔχοι τὰς ἐναντίας δόξας ὁ διεψευσμένος περὶ τούτου.* *Ibid.* c. 6, 1011, b, 15: *ἐπεὶ δ' ἀδύνατον τὴν ἀντίφασιν ἀληθεύεσθαι ἅμα κατὰ τοῦ αὐτοῦ* [for which at line 20 he substitutes *ἅμα καταφάναι καὶ ἀποφάναι ἀληθῶς*], *φανερὸν ὅτι οὐδὲ τἀναντία ἅμα ὑπάρχειν ἐνδέχεται τῷ αὐτῷ . . . ἀλλ' ἢ πῇ ἄμφω, ἢ θάτερον μὲν πῇ θάτερον δὲ ἁπλῶς.*

[3] In this sense Aristotle in *Metaph.* iv. 4 sq. confutes the statement (which, however, he only ascribes to certain of the older schools as being in his view an inference from their tenets; cf. ZELLER, *Ph. d. Gr.* part i. 600 sq., 910, 4), that 'an object can both be and not be the same thing at the same time,' by proving that in every statement the principle of non-contradic-

sophistical misuse of it to deny the connection of different properties in one subject, or the possibility of becoming and of change, by that detailed exposition of it in which he shows that it is not absolutely impossible that contradictions should be predicated of the same subject, but only that they should be so predicated together and in the same relation.[1]

By similar arguments to these with which he established the Law of Contradiction, he lays down that of the Excluded Middle[2] as an incontestable Axiom.[3] But he does not expressly deduce the one from the other.

Though Aristotle maintains so decidedly that every kind of knowledge brought about by demonstration is doubly conditioned by an immediate and undemonstrable conviction of the mind, yet he is far from representing this conviction as itself incapable of scientific verification. The starting-point of all demonstration is *undemonstrable*—it is incapable of being deduced from any other principle as from its cause. Yet it can be shown from the given facts to be the condition which underlies them, and which their existence presup-

tion is presupposed. In c. 5 *init.*, c. 6 (cf. c. 4, 1007, b, 22, xi. 6 *init.*), he reduces to the same principle the dictum (*de quo v.* ZELLER, *Ph. d. Gr.* part i. 982, 1, 988, 2) that 'that is true for each one which appears so to him'; and to this, amongst other arguments — coinciding broadly with the Platonic *Theætetus*—he especially opposes the objection (1011, a, 17 sqq. b, 4) that since every φαινόμενον must be a τινὶ φαινόμενον, the dictum would make *everything* a πρός τι.

[1] See preceding note.

[2] Οὐδὲ μεταξὺ ἀντιφάσεως ἐνδέχεται εἶναι οὐδέν; cf. p. 230, *supra*.

[3] *Metaph.* iv. 7; in applying his argument, Aristotle has adopted here those reasons which are borrowed from the consideration of Change in Nature, evidently wishing to prove his theory not only as a logical, but also as a metaphysical principle.

poses. So in the place of Demonstration, comes in Induction.[1] There are thus two lines of scientific thinking which require to be distinguished: the one which leads up to principles, the other which leads down from principles[2]—the movement from the universal to the particular, from that which is *in itself* the more certain to that which is so *for us*; and the reverse movement from the individual, as that which is best known to us, to the universal, which is in its own nature the more sure. In the former direction goes syllogism and scientific demonstration: in the latter goes induction.[3] And by one or other of these ways all knowledge comes to be. That which by virtue of its

[1] Cf. with what follows the references on p. 242, n. 6 *supra*. The name 'ἐπαγωγὴ' refers either to the *adducing* of particular instances, from which a universal proposition or concept is abstracted (TRENDELENBURG, *Elem. Log. Arist.* 84: HEYDER, *Vergl. d. arist. und hegel. Dialektik*, p. 212 sq.), or to the *introduction* to these instances of the person to be instructed (WAITZ, *Arist. Org.* ii. 300). In favour of the latter explanation there are certain passages, in which 'ἐπάγειν' has as its object the person knowing; as *Top.* viii. 1, 156, a, 4: ἐπάγοντα μὲν ἀπὸ τῶν καθέκαστον ἐπὶ τὰ καθόλου, but especially *Anal. Post.* i. 1, 71, a, 19: ὅτι μὲν γὰρ πᾶν τρίγωνον ἔχει δυσὶν ὀρθαῖς ἴσας, προῄδει, ὅτι δὲ τόδε . . . τρίγωνόν ἐστιν, ἅμα ἐπαγόμενος ἐγνώρισεν . . . πρὶν δ' ἐπαχθῆναι ἢ λαβεῖν συλλογισμὸν, τρόπον μέν τινα ἴσως φατέον ἐπίστασθαι, &c.; c. 18, 81, b, 5: ἐπαχθῆναι δὲ μὴ ἔχοντας αἴσθησιν ἀδύνατον. 'Ἐπάγειν,' however, also means 'to prove by induction,' as in ἐπάγειν τὸ καθόλου, *Top.* i. 18, 108, b, 10; *Soph. El.* 15, 174, a, 34.

[2] *Eth. N.* i. 2, 1095, a, 30; cf. ZELLER, *Ph. d. Gr.* pt. i. 491, 2; and see p. 205, n. 2 *supra*.

[3] Besides Induction, HEYDER (*Vergl. d. arist. und hegel. Dial.* 232 sq.) finds in Aristotle (*Phys.* i. 1, 184, a, 21 sqq.) indications of another process, by which we should proceed from the universal of sensible perception to the concept, as the more particular and definite—just as in induction we go from the particular in perception to the universal of the concept. But he himself rightly observes that this is only an induction reversed (though this case is not usually made very prominent by Aristotle). When a universal is brought out as that which is common to many individual cases, it is thereby

nature admits of no demonstration must be established by induction.[1] We have already remarked that this undemonstrable element of thought need not necessarily be abstracted from experience, but that Aristotle rather regards the universal axioms as apprehended by the spontaneous activity of the reason.[2] But as he sees that this activity of reason is only gradually developed in the individual under the guidance of experience, so he believes there are no other means of scientifically verifying its content and deliverance but by a comprehensive induction.[3] Many difficulties are involved in this. For inductive reasoning is founded,

separated from the complex in which it presents itself to perception; and this is all that Aristotle has in his mind in the passage cited; cf. p. 205 sq. *supra*.

[1] *Anal. Pri.* ii. 23, 68, b, 13: ἅπαντα γὰρ πιστεύομεν ἢ διὰ συλλογισμοῦ ἢ δι' ἐπαγωγῆς. *Ibid.* at line 35; *vid. supr.* p. 206, n. 1; *Eth.* i. 7, 1098, b, 3: τῶν ἀρχῶν δ' αἱ μὲν ἐπαγωγῇ θεωροῦνται, αἱ δ' αἰσθήσει, &c.; vi. 3, 1139, b, 26: ἐκ προγινωσκομένων δὲ πᾶσα διδασκαλία· . . . ἡ μὲν γὰρ δι' ἐπαγωγῆς, ἡ δὲ συλλογισμῷ. ἡ μὲν δὴ ἐπαγωγὴ ἀρχή ἐστι καὶ τοῦ καθόλου, ὁ δὲ συλλογισμὸς ἐκ τῶν καθόλου. εἰσὶν ἄρα ἀρχαὶ ἐξ ὧν ὁ συλλογισμὸς, ὧν οὐκ ἔστι συλλογισμός· ἐπαγωγὴ ἄρα. (Trendelenburg, *Hist. Beitr.* ii. 366 sq., and Brandis, ii. b, 2, 1443, would like to cut out the last two words, on the ground that *all* unproved knowledge does not rest on induction; but the form of statement is not more universal than in the other parts of this passage, and the explanation of the whole will be gathered from what is said in the text.) Similarly *Anal. Post.* i. 1 *init.* *Anal. Post.* i. 18: μανθάνομεν ἢ ἐπαγωγῇ ἢ ἀποδείξει. ἔστι δ' ἡ μὲν ἀπόδειξις ἐκ τῶν καθόλου, ἡ δ' ἐπαγωγὴ ἐκ τῶν κατὰ μέρος· ἀδύνατον δὲ τὰ καθόλου θεωρῆσαι μὴ δι' ἐπαγωγῆς. *Ibid.* ii. 19, 100, b, 3: δῆλον δὴ ὅτι ἡμῖν τὰ πρῶτα ἐπαγωγῇ γνωρίζειν ἀναγκαῖον. *Top.* i. 12: ἔστι δὲ τὸ μὲν [εἶδος λόγων διαλεκτικῶν] ἐπαγωγὴ, τὸ δὲ συλλογισμός . . . ἐπαγωγὴ δὲ ἡ ἀπὸ τῶν καθέκαστον ἐπὶ τὰ καθόλου ἔφοδος . . . ἔστι δ' ἡ μὲν ἐπαγωγὴ πιθανώτερον καὶ σαφέστερον καὶ κατὰ τὴν αἴσθησιν γνωριμώτερον καὶ τοῖς πολλοῖς κοινὸν, ὁ δὲ συλλογισμὸς βιαστικώτερον καὶ πρὸς τοὺς ἀντιλογικοὺς ἐναργέστερον. *Ibid.* c. 8 *init.*; *Rhet.* i. 2, 1356, a, 35; and cf. *supra*, p. 205 sq.

[2] See p. 197 sqq., and 246 sq. *supra*.

[3] See also the citation *infra* (in note 1 on p. 256) from *Top.* i. 2.

as we have shown,[1] upon such a mutual relation of concepts as will admit of the conversion of the universal affirmative minor premiss. It assumes that the minor and the middle of the syllogism have the same extension. In other words, no cogent induction is possible, unless a predicate can be shown to be common to all the individuals of that genus of which it is to be predicated.[2] Such an exhaustive acquaintance with every individual case is impossible.[3] It would seem, therefore, that every induction is imperfect, and that every assumption which bases itself upon induction must remain uncertain. To meet this difficulty, it was requisite to introduce an abbreviation of the inductive method, and to find something which would make up for the impossibility of complete observation of every individual instance. This Aristotle finds in Dialectic or Probable Demonstration,[4] the theory of which he lays down in the *Topics*. The value of dialectic consists, he says, not only in the fact that it is an intellectual discipline, nor that it teaches argumentation as a fine art: it is also of essential service in scientific research, inasmuch as it teaches us to explore and estimate the different

[1] P. 242, n. 6.

[2] Cf. *Anal. Pr.* ii. 24 *fin.*: [τὸ παράδειγμα] διαφέρει τῆς ἐπαγωγῆς, ὅτι ἡ μὲν ἐξ ἁπάντων τῶν ἀτόμων τὸ ἄκρον ἐδείκνυεν ὑπάρχειν τῷ μέσῳ . . ., τὸ δὲ . . . οὐκ ἐξ ἁπάντων δείκνυσιν. *Ibid.* c. 23, 68, b, 27: δεῖ δὲ νοεῖν τὸ Γ [the lowest concept in the inductive syllogism] τὸ ἐξ ἁπάντων τῶν καθέκαστον συγκείμενον· ἡ γὰρ ἐπαγωγὴ διὰ πάντων.

[3] Even if we supposed we knew *all* the cases which *had* occurred of a particular kind, still we could never know that the future would not bring other experiences differing from them. The supposition itself is by the nature of the case impossible, and even more clearly unprovable.

[4] On this narrower meaning of the 'dialectical' in Aristotle, see WAITZ, *Arist. Org.* ii. 435 sqq.; cf. following note.

aspects under which an object can be contemplated. It is specially useful in establishing the scientific principles; for as these cannot be deduced by demonstration from anything more certain than themselves, there is nothing left for us but to get at them from the side of probability.[1] Such an attempt must start from the prevailing tenets of humanity. What all the world, or at least the experienced and intelligent part of it, believes, is always worthy of consideration, since it carries with it a presumption that it rests upon a real experience.[2]

[1] *Top.* i. 1: Ἡ μὲν πρόθεσις τῆς πραγματείας, μέθοδον εὑρεῖν, ἀφ' ἧς δυνησόμεθα συλλογίζεσθαι περὶ παντὸς τοῦ προτεθέντος προβλήματος ἐξ ἐνδόξων, καὶ αὐτοὶ λόγον ὑπέχοντες μηθὲν ἐροῦμεν ὑπεναντίον. . . . διαλεκτικὸς δὲ συλλογισμὸς ὁ ἐξ ἐνδόξων συλλογιζόμενος . . . ἔνδοξα δὲ τὰ δοκοῦντα πᾶσιν ἢ τοῖς πλείστοις ἢ τοῖς σοφοῖς, καὶ τούτοις ἢ πᾶσιν ἢ τοις πλείστοις ἢ τοις μάλιστα γνωρίμοις καὶ ἐνδόξοις. *Ibid.* i. 2: ἔστι δὴ πρὸς τρία [χρήσιμος ἡ πραγματεία], πρὸς γυμνασίαν, πρὸς τὰς ἐντεύξεις, πρὸς τὰς κατὰ φιλοσοφίαν ἐπιστήμας . . . πρὸς δὲ τὰς κατὰ φιλοσοφίαν ἐπιστήμας, ὅτι δυνάμενοι πρὸς ἀμφότερα διαπορῆσαι ῥᾷον ἐν ἑκάστοις κατοψόμεθα τἀληθές τε καὶ τὸ ψεῦδος. ἔτι δε πρὸς τὰ πρῶτα τῶν περὶ ἑκάστην ἐπιστήμην ἀρχῶν. ἐκ μὲν γὰρ τῶν οἰκείων τῶν κατὰ τὴν προτεθεῖσαν ἐπιστήμην ἀρχῶν ἀδύνατον εἰπεῖν τι περὶ αὐτῶν, ἐπειδὴ πρῶται αἱ ἀρχαὶ ἁπάντων εἰσὶ, διὰ δὲ τῶν περὶ ἕκαστα ἐνδόξων ἀνάγκη περὶ αὐτῶν διελθεῖν. τοῦτο δ' ἴδιον ἢ μάλιστα οἰκεῖον τῆς διαλεκτικῆς ἐστιν· ἐξεταστικὴ γὰρ οὖσα πρὸς τὰς ἁπασῶν τῶν μεθόδων ἀρχὰς ὁδὸν ἔχει. Aristotle (*Top.* viii. 11, 162, a, 15) calls the dialectical syllogism ἐπιχείρημα. THUROT, *Etudes sur Arist.* 201 sqq., compares the different statements of Aristotle on the office and use of Dialectics; but he has laid rather too much stress upon the partial inaccuracy of Aristotle's language. Cf. on the *Topics* also p. 68, n. 1, *supra*.

[2] *Divin. in S.* c. 1 *init.*: περὶ δὲ τῆς μαντικῆς τῆς ἐν τοῖς ὕπνοις γινομένης . . . οὔτε καταφρονῆσαι ῥᾴδιον οὔτε πεισθῆναι. τὸ μὲν γὰρ πάντας ἢ πολλοὺς ὑπολαμβάνειν ἔχειν τι σημειῶδες τὰ ἐνύπνια παρέχεται πίστιν ὡς ἐξ ἐμπειρίας λεγόμενον, &c.; *Eth.* i. 8 *init.* vi. 12, 1143, b, 11; *Rhet.* i. 1, 1355, a, 15 (cf. the beginning of ch. xiv. *infra*). For the same reason, *Eth.* vii. 14, 1153, b, 27 appeals to Hesiod (Ἔ. κ. ἡμ. 763): φήμη δ' οὔ τί γε πάμπαν ἀπόλλυται, ἥν τινα λαοὶ πολλοὶ . . . and SYNES. *Calv. Enc.* c. 22 (*Ar. Fr.* No. 2) quotes as Aristotelian: ὅτι [sc. αἱ παροιμίαι] παλαιᾶς εἰσι φιλοσοφίας ἐν ταῖς μεγίσταις ἀνθρώπων φθοραῖς ἀπολομένης ἐγκαταλείμματα περισωθέντα

Such a foundation may appear unstable; and the sense of this forced on Aristotle the need (which had likewise driven Socrates to form his dialectic) of supplying its deficiencies by combining the different points of view which cross one another in popular opinion, and by balancing them one with the other. From this he got his habit of prefacing his dogmatic dissertations with Ἀπορίαι; of enumerating the different sides from which the subject may be touched; of testing conclusions by mutual comparison and by established standards; and, finally, of raising difficulties by this testing process and obtaining a ground for a scientific exposition from their solution.[1] These dialectical elucidations prepare the way for positive scientific conclusions by clearing up the questions which are in issue, by grouping the inductive results under a certain number of general aspects, and by making them explain each other and so combining them into an aggregate result. From them, our thought is led on into the

διὰ συντομίαν καὶ δεξιότητα. Cf. also *Polit.* ii. 5, 1264, a, 1; *Eth. Eud.* i. 6 *init.*, and, as to the belief in the αἰθήρ, *De Cœlo*, 270, b, 19, *Metaph.* xii. 8, and *Meteor.* 339, b, 27. With this is connected Aristotle's preference for proverbial sayings and 'gnomes,' about which cf. p. 104, n. 1 (on the Παροιμίαι).

[1] *Metaph.* iii. 1 *init.*: ἔστι δὲ τοῖς εὐπορῆσαι βουλομένοις προὔργου τὸ διαπορῆσαι καλῶς· ἡ γὰρ ὕστερον εὐπορία λύσις τῶν πρότερον ἀπορουμένων ἐστί, λύειν δ' οὐκ ἔστιν ἀγνοοῦντας τὸν δεσμόν, &c. *Eth. N.* vii. 1 *fin.*: δεῖ δ', ὥσπερ ἐπὶ τῶν ἄλλων, τιθέντας τὰ φαινόμενα καὶ πρῶτον διαπορήσαντας οὕτω δεικνύναι μάλιστα μὲν πάντα τὰ ἔνδοξα περὶ ταῦτα τὰ πάθη, εἰ δὲ μή, τὰ πλεῖστα καὶ κυριώτατα· ἐὰν γὰρ λύηταί τε τὰ δυσχερῆ καὶ καταλείπηται τὰ ἔνδοξα, δεδειγμένον ἂν εἴη ἱκανῶς. Cf. *De Cœlo*, i. 10 *init.* *Anal. Post.* ii. 3 *init.*, and WAITZ on this passage; also *Phys.* iv. 10 *init.*, *Meteorol.* i. 13 *init.*, *De An.* i. 2 *init.*, *Longit. Vit.* c. 1, 464, b, 21, &c. In *Top.* viii. 11, 162, a, 17, the ἀπόρημα is defined as συλλογισμὸς διαλεκτικὸς ἀντιφάσεως. These Aristotelian 'Apories' served the Scholastics as a model for their *disputatio pro et contra.*

explicit problems, the true solution of which brings us to philosophic knowledge.[1]

It is true that neither this theory nor the actual practice of Aristotle can satisfy the stricter requirements of modern science.

Whether we consider his procedure in the working out from the observed facts of the laws and definitions of Science, or in the establishment of natural phenomena themselves, we must admit that it shows serious omissions and defects. Of Induction, for example, he says that it consists in the collection, from *all* the instances of a given class, of a proposition which expresses as a universal law that which was true of all these particular cases.[2] In truth, Induction consists in inferring such a proposition from *all the cases known to us*; and in considering the principle on which the inductive method rests, the main point is to inquire how we are justified in concluding from *all the cases known to us*, a law for *all like cases*. Aristotle can hardly be blamed for not raising exactly this question, since none of his successors succeeded in stating it clearly until Stuart Mill wrote his Logic; and even he could find no answer but an inadequate and self-contradictory theory. But it was an inevitable result of Aristotle's position that his theory of Induction does not help us over the real difficulty, which is to ascertain how the correctness of an inductive proof can be assumed in spite of the fact that the range of experiences on which it rests is not *complete*. The fact is that Aristotle, as we have

[1] *Metaph.* iv. 2, 1004, b, 25: ἔστι δὲ ἡ διαλεκτικὴ πειραστικὴ περὶ ὧν ἡ φιλοσοφία γνωστική.

[2] Cf. *supra*, p. 242, n. 6, and p. 255.

already indicated, has tried to fill up the gap by the invention of the 'proof from probability,' and by the dialectical treatment of the *ἀπορίαι*. In the latter his acuteness and his scientific width of view are conspicuous throughout. But it cannot make up for a satisfactory and methodical comparison of observed facts, if only for the reason that the theories discussed are not themselves based on pure observation, but on the *ἔνδοξον*—on views, that is, in which guesses, inferences and fancies have, or at least may have, become mixed up with actual experience. Even where Aristotle is dealing with actual observation, he falls, in many respects, far short of the standard which we are accustomed to set to the scientific observer. As to the conditions of a trustworthy observation, or the methods to be applied for establishing the correctness of one's own observations or controlling the accuracy of information given by others, we have only here and there a chance remark. As he is too little conscious of the part which a subjective mental activity plays in all perception,[1] so it was natural that his method should not adequately provide for the subjective control of the errors of observation.

In his own work there is, on this side of it, much to criticise. It is true that he has brought together, especially in the zoological writings, an extraordinary volume of statements of fact, the overwhelming majority of which (so far as they can now be verified [2]) have been

[1] Cf. p. 210 and *infra*, ch. x.

[2] For this is not always possible, partly because it is often uncertain which animal is meant by this or that name, partly because not all the animals mentioned by Aristotle are sufficiently known to us.

found to be correct. Most of these, of course, are patent enough to any observer; but there are also many cases among them where careful investigation would be required.[1] The methods of experiment he did not altogether neglect.[2] His historical studies excite our

[1] Thus we see from *Part. An.* iii. 4, 665, a, 33 sqq. (cf. LEWES, *Arist.* § 394), that he had made experiments on the development of the embryo in the egg, since he there remarks that we often find in eggs, even on the third day, the heart and the liver as isolated points. So in *Gen. An.* ii. 6, he makes remarks on the order of appearance of the different parts of the body; from which, as even LEWES (§ 475) admits, we see that Aristotle studied embryonic development. A statement, long considered fabulous, about the appearance of a placenta in a kind of shark (*H. An.* vi. 10, 565, b, 1) has been confirmed (by Joh. MÜLLER, *Abh. d. Berl. Ak.* 1840, *Phys. math. Kl.* 187, cf. LEWES, *loc. cit.* § 205); the same is the case (cf. LEWES, § 206–208) with Aristotle's statements about the embryo of the ink-fish (*Gen. An.* iii. 8, 758, a, 21); about fishes which build a nest (*H. An.* viii. 30, 607, b, 19); about the eyes of the mole (*De An.* iii. 1, 425, a, 10, *H. An.* i. 9, 491, b, 28 sqq.), and about a gland which a certain kind of stag has under the tail (*H. An.* ii. 15, 506, a, 23, cf. W. Rapp in *Müller's Archiv. f. Anat.* 1839, 363 sq.). With regard to his description of the cephalopods, LEWES remarks (§ 340 sq.) that it could only spring from a great familiarity with their forms, and we see in it the unmistakeable traces of personal knowledge. All the more odd is it that Lewes should complain of Aristotle's failure to mention the freshness of the sea breeze, the play of the waves, &c. This is to blame Aristotle for not having the bad taste to drop from the realism of a zoological description into the style of a *feuilleton*, or the impertinence to explain to people who had the sea daily before their eyes the things they had known all their lives.

[2] EUCKEN, *Meth. d. Arist. Forsch.*, p. 163 sqq., gives instances from *Meteor.* ii. 3, 359, a, 12, 358, b, 34 (*H. An.* viii. 2, 590, a, 22); *H. An.* vi. 2, 560, a, 30 (*Gen. An.* iii. 1, 752, a, 4); *De An.* ii. 2, 413, b, 16; *De Respir.* iii. 471, a, 31; *H. An.* vi. 37, 580, b, sqq. (if this was really an experiment, and not rather a chance observation). Then again there are others introduced with a λέγουσιν, *Gen. An.* iv. 1, 765, a, 21 (which is later on disputed by himself), and *Hist. An.* ii. 17, 508, b, 4 (though in *Gen. An.* iv. 6, 774, b, 31 the same is stated in his own name). Some of these experiments are of such a questionable kind, that we may well doubt whether Aristotle himself conducted them; and, on the whole, he appeals to experiments so seldom that we cannot avoid seeing how little he, or Greek science in general, recognised their value.

high admiration by their extent and their accuracy.[1] To received accounts he so far takes a critical attitude that he is careful to correct many false views,[2] to direct attention to the untrustworthiness of some of his authorities,[3] and to attack even universally accepted myths.[4] Where he lacks adequate means of observation, he is willing to reserve his judgment;[5] where there might be a tendency to close an inquiry too precipitately, he gives us warning that we should first weigh all the objections suggested by the matter in hand before we decide.[6] In a word, he shows himself not only an untiring inquirer whose thirst[7] for the knowledge of all things great and small was never satisfied,

[1] Besides the numberless items of information from the History of the Greek States, of Philosophy, of Poetry, and of Rhetoric, which the extant works contain, we may refer here to what is quoted to us from the *Politics* and other lost works; *de quo vide* p. 101, n. 1; 73, n. 1; 62, n. 5; 58, n. 1; 103, n. 1, and 104, n. 1.

[2] Thus in the cases named by EUCKEN (*loc. cit.* 124), *Gen. An.* iii. 5, 755, b, 7 sqq., 756, a, 2; ch. 6, 756, b, 13 sqq., 757, a, 2 sqq.; iv. 1, 765, a, 16 sqq., 21 sqq.; *H. An.* viii. 24, 605, a, 2 sq.

[3] As in *Hist. An.* viii. 28, 606, a, 8, ii. 1. 501, a, 25, where certain statements of Ctesias are called in question as untrustworthy; in *Gen. An.* iii. 5, 756, a, 33, where he says that fishermen frequently overlook the occurrence in question: *οὐθεὶς γὰρ αὐτῶν οὐθὲν τηρεῖ τοιοῦτον τοῦ γνῶναι χάριν.* So in *Hist. An.* ix. 41, 628, b, 8: *αὐτόπτῃ δ' οὔπω ἐντετυχήκαμεν.* But, on the other hand, in c. 29, 37, 618, a, 18, 620, b, 23, he appeals to eyewitness.

[4] As in doubting the genuineness of the poems of Orpheus, and the existence of their supposed author; as to which see ZELLER, *Ph. d. Gr.* vol. i. 50.

[5] Cf. *supra*, p. 169, n. 1.

[6] *De Cælo*, i. 13, 294, b, 6: *ἀλλ' ἐοίκασι μέχρι τινὸς ζητεῖν, ἀλλ' οὐ μέχρι περ οὗ δυνατὸν τῆς ἀπορίας· πᾶσι γὰρ ἡμῖν τοῦτο σύνηθες, μὴ πρὸς τὸ πρᾶγμα ποιεῖσθαι τὴν ζήτησιν ἀλλὰ πρὸς τὸν τἀναντία λέγοντα· καὶ γὰρ αὐτὸς ἐν αὑτῷ ζητεῖ μέχρι περ ἂν οὗ μηκέτι ἔχῃ ἀντιλέγειν αὐτὸς αὑτῷ· διὸ δεῖ τὸν μέλλοντα καλῶς ζητήσειν ἐνστατικὸν εἶναι διὰ τῶν οἰκείων ἐνστάσεων τῷ γένει, τοῦτο δ' ἐστὶν ἐκ τοῦ πάσας τεθεωρηκέναι τὰς διαφοράς.*

[7] Τὸ *φιλοσοφίας διψῆν*: *vide supra*, p. 169, n. 3.

but also an observer of care and common sense. Nevertheless, we find that glaringly incorrect statements are not rare in Aristotle, and occur sometimes in cases where, even with the simple methods to which he was limited, the correction of the error should have been easy enough.[1] And still more commonly do we find that he draws from insufficient and incomplete data conclusions much too rash and sweeping, or that he forces his facts to conform to some general theory which has itself no adequate experiential basis. In his inductions he is often far too rash, and by basing them on various popular assumptions he leaves them without any sure foundation. He shows himself but little

[1] Cf. EUCKEN, *loc. cit.* 155 sqq. Such cases are: that Aristotle gives the male sex more teeth than the female (*Hist. An.* ii. 3, 501, b, 19; on the conjectured cause of this error see LEWES, *Arist.* § 332, A. 19); that the human male has three sutures in the skull, and the female only one running around it (*ibid.* i. 8, 491, b, 2); that man has only eight ribs on each side (*ibid.* i. 15, 493, b, 14)—a supposition, as it would seem, universally held at that time, and explained by supposing that it was founded, not on anatomical observations of human corpses, but on observations of living bodies; cf. p. 89, n. 1; that the lines in the hand indicate longer or shorter span of life (*ibid.* 493, b, 32 sq.); that the hinder part of the skull is empty (*H. An.* i. 8, 491, a, 34; *Part. An.* ii. 10, 656, b, 12; *Gen. An.* v. 4, 784, b, 35). Further examples in LEWES, § 149 sqq., 154 sqq., 315, 332, 347, 350, 352, 386 sq., 398, 400, 411, 486. When, however, it is said that Aristotle in the *Part. An.* iii. 6, 669, a, 19, asserted that only man has a pulsation of the heart (so LEWES, § 399, c, where he adds: 'According to this passage one might think that Aristotle never held a bird in his hand;' and EUCKEN, 155, 2), this is an inaccurate accusation. Aristotle distinguishes, in *De Respir.* 20, 479, b, 17, the σφυγμὸς or heart-beat always going on, from the πήδησις τῆς καρδίας = the strong throb of the heart in passion. And even the latter he does not confine to men, for he says in the tract referred to that it sometimes becomes so strong that animals die of it. All that is said in the passage cited is: ἐν ἀνθρώπῳ τε γὰρ συμβαίνει μόνον ὡς εἰπεῖν—*i.e.* the passion-throb occurs *almost* exclusively in Man.

skilled in the art of analysing the phenomena methodically into their real factors, of following out each fact to its causes and the laws of its action, and of unravelling the conditions of the causal nexus. He has not mastered—even in the degree which with the scanty technical skill of Greece was possible to him—the best methods of establishing and analysing facts, of checking observations and theories, or of applying experiment to science. He does not, in a word, come up to the standard to which in our day a student of nature is expected to attain. There is nothing strange in this; rather would it be strange if it were otherwise.

If Aristotle were without the faults we note in his theory and practice, he would not only be far more in advance of his own time than in fact he was—he would have belonged to another and much later period of human thought. Before science could attain to that certitude, correlation and exactness of procedure by which we excel the ancients, it was necessary in all ranges of scientific and historical inquiry that the facts should be collected and all manner of experiments made, that the laws of particular classes of phenomena should be sought out and gradually universalised, that hypotheses should be proposed for the elucidation of various series of facts, and these again continually checked and revised by the facts themselves. To this end no general disquisitions on methodology, but only scientific work itself could assist. Until the experimental sciences had passed far beyond the position at which they stood in Aristotle's time, it was not possible that either the methodology or the methods of experimental knowledge

should really advance beyond the form in which he stated them. In the then state of science it was already a great thing that observed facts should be collected in such vast masses and with such care. It was not to be expected that they should also be with the like care tested, or that his personal observations should be exactly discriminated from information otherwise received, and the value of the latter critically appraised. Many of the assertions which we find absurd, were probably taken by Aristotle from others in all good faith, and were not doubted by him, merely because the knowledge of nature which he possessed gave him no reason to think them impossible. When we are surprised by the rashness with which the Greeks often built hypotheses or theories upon facts whose falsity is obvious to us at first sight, we do not stop to think how utterly they were ignorant of all our aids to accurate observation, and how greatly this poverty of tools must have hindered every sort of helpful experiment. To fix time without a watch, to compare degrees of heat without a thermometer, to observe the heavens without a telescope and the weather without a barometer—these and the like were the tasks which the natural philosophers of Greece had to set themselves. Where there is no basis for accuracy as to facts, the difficulties that attend the classification of phenomena, the discovery of natural laws, and the correction of hypothesis by experience are so vastly increased, that we cannot wonder if scientific inquiry rises but slowly and insecurely above the levels of prescientific fancy. The service which Aristotle nevertheless did for the world in

the collection of data, and the acuteness with which he strove to explain the facts he knew, cannot but be appreciated if we try to judge him by any standards that conform to the knowledge and the opportunities of his day.

To enter into the details of Aristotle's *Topics*, or to examine his refutation of the Sophistic fallacies, are equally beyond our present scope. No wider view of his scientific principles is to be got from them, but only an application of them to a field beyond the limits of Science properly so called.[1] But this is the proper place to touch upon his researches into Definition, which we find partly in the second *Analytics*, partly in the *Topics*.[2] As the Concept forms the starting point of all scientific research, so we may say conversely that a complete acquaintance with the Concept—which is Definition—is the goal toward which it strives. Knowledge is indeed nothing but insight into the grounds of things, and in the concept this insight is summed up. The 'what' is the same as the 'why.' We apprehend the *concept* of the thing as soon as we apprehend its *causes*.[3] So far, Definition has the same problem as Demonstration. In both we try to discover the means by which the object has been brought to be what it is.[4] Nevertheless, they do not, with Aristotle, entirely coincide. In the first place, it is clear that

[1] BRANDIS, pp. 288–345 gives a sketch of both.

[2] Besides the general works on Aristotelian Logic, see KÜHN, *De notionis definitione*, etc., and RASSOW, *Arist. de notionis definitione* (cf. *supra*, p. 212, n. 2); HEYDER, *Vergl. d. arist. u. hegel. Dialektik*, p. 247 sqq., and KAMPE, *Erkenntnissth. d. Arist.* 195 sqq.

[3] *Vid. supra*, p. 163, n. 2, and p. 173, n. 2.

[4] *Vid. supra*, p. 173, n. 2.

everything which admits of demonstration does not equally admit of definition; for negatives, particulars, and propositions predicating properties, can all be demonstrated, whereas definition is always universal and affirmative, and is not concerned with mere properties but with the substantial essence only.[1] The converse is no less true—not everything that can be defined admits of demonstration, as may be seen at once from the fact that demonstrations must start from undemonstrable definitions.[2] Indeed, it seems to be true in general, that the contents of a definition are undemonstrable by syllogisms: for demonstration *presupposes* a knowledge of the essence of the object, while this is precisely what definition seeks. The one points out that a property belongs as predicate to a certain subject; the other does not concern itself with individual properties, but with the essence itself. The one inquires for a '*that*,'[3] the other for a '*what*';[4] and in order to specify *what* anything is, we must first know *that* it is.[5] Here, however, we must draw a distinction. The fact is that a definition cannot be derived through a single syllogism. We cannot take that which is asserted in the definition of an object and use it as the predicate of a middle term in our major premiss, in order to attach it again in the conclusion to the object which was to be defined: for if, in such a process, we are dealing with not merely one or other of the properties, but with the whole concept of the object, then it must

[1] *Anal. Post.* ii. 3.

[2] *Ibid.* 90, b, 18 sqq. (cf. *supra*, p. 246 sqq.). Another kindred reason is there given also.

[3] ὅτι ἤ ἔστι τόδε κατὰ τοῦδε ἢ οὐκ ἔστιν.

[4] *Anal. Post.* ibid. 90, b, 28 sqq.; cf. c. 7, 92, b, 12.

[5] *Ibid.* c. 7, 92, b, 4.

follow that both major and minor premisses would be alike definitions—the one of the middle term and the other of the minor. A proper definition, however, cannot be applied to any other object except the one to be defined.[1] Consequently, in every definition, the subject and the predicate must be equal in comprehension and extension, so that the universal affirmative proposition which expresses the definition, must always be simply convertible. Therefore it follows that, by such a process as we have described, we should only be demonstrating the same by the same,[2] and should get, not a real definition, but a verbal explanation.[3]

Plato's method of arriving at the idea by means of division is no better; for the division presupposes the concept.[4] The same objection also applies to the method[5] of assuming a definition and proving its validity *a posteriori* by reference to individuals; for how can we feel certain that the hypothesis which we assumed, does really express the idea of the object, and not merely a number of particular marks?[6] If, lastly, we endeavoured to bring definition within the province

[1] *Vid. supra*, p. 216 sqq.

[2] *Anal. Post.* ii. 4. As an illustration he uses the definition of the soul as 'a self-moving number.' If we wished to establish this by means of the syllogism: 'everything that is itself the cause of life is a self-moving number; the soul is itself the cause of life, &c,' this would be insufficient, for in this way we could only prove that the soul is a self-moving number, and not that its *whole* essence, its concept, is contained in this definition. In order to show this, we should have to argue: 'the concept of that which is itself the cause of life consists in its being a self-moving number; the concept of the soul consists in its being itself the cause of life,' &c.

[3] *Anal. Post.* ii. c. 7, 92, b, 5, 26 sqq.; cf. c. 10 *init.* i. 1, 71, a, 11; *Top.* i. 5 *init.*; *Metaph.* vii. 4, 1030, a, 14.

[4] *Vid. supra*, p. 241, n. 3.

[5] Which one of the philosophers of that time (we know not who) had likewise made.

[6] *Anal. Post.* ii. c. 6, and also WAITZ,

of the epagogic process, we should be met with the difficulty that induction never brings us to a 'what,' but always to a 'that.'[1] But although definition can neither be obtained by demonstration nor by induction, so long as they are separately used, yet Aristotle thinks it possible to reach it by a union of the two. When experience in the first instance has taught us that certain characteristics appertain to an object, and we begin to search for their causes, or for the conception which links them to their subject, we are so establishing by demonstration the essence of the thing;[2] and if we continue this process until the object is defined in all its aspects,[3] we at last obtain the concept of it. Although syllogistic demonstration, therefore, may be insufficient to constitute a perfect definition, yet it helps us to find it,[4] and in this sense definition may be said to be under another form a demonstration of the essence.[5] This process is admissible in every case but that of things the being of which is not dependent on any causes outside themselves; and the conception of

[1] *Loc. cit.* c. 7, 92, a, 37: Induction shows that something in general is of such and such a kind, by proving that it is so in all particular instances; but this is equivalent to proving merely a *ὅτι ἔστιν ἢ οὐκ ἔστιν*, not the *τί ἐστι*.

[2] *Ibid.* c. 8, 93, a, 14 sqq.

[3] It is necessary at this point to fill out the too short hints of Aristotle's statement by reference to the argument cited at p. 216, n. 1 *supra*, from *Anal. Post.* ii. 13.

[4] *Anal. Post.* ii. 8 *fin.*: *συλλογισμὸς μὲν τοῦ τί ἐστιν οὐ γίνεται οὐδ' ἀπόδειξις, δῆλον μέντοι διὰ συλλογισμοῦ καὶ δι' ἀποδείξεως· ὥστ' οὔτ' ἄνευ ἀποδείξεως ἔστι γνῶναι τὸ τί ἐστιν οὗ ἐστιν αἴτιον ἄλλο, οὔτ' ἔστιν ἀπόδειξις αὐτοῦ.*

[5] *Ibid.* c. 10, 94, a, 11: *ἔστιν ἄρα ὁρισμὸς εἷς μὲν λόγος τοῦ τί ἐστιν ἀναπόδεικτος, εἷς δὲ συλλογισμὸς τοῦ τί ἐστι, πτώσει διαφέρων τῆς ἀποδείξεως, τρίτος δὲ τῆς τοῦ τί ἐστιν ἀποδείξεως συμπέρασμα*: the fuller explanation of which is given above. That definitions of the latter kind do not suffice, Aristotle tells us in *De An.* ii. 2; *vid. supra*, p. 173, n. 2.

these can only be postulated as immediately certain, or elucidated by induction.[1]

From these researches into the nature and conditions of Definition we obtain some important rules as to the method by which in practice it is arrived at. Since the essential nature of an object[2] can only be defined genetically by the indication of its causes, Definition must embrace those distinctive characteristics by which the object is actually made to be what it is. It must, by Aristotle's rule, be got at by means of that which is prior and more known; nor must these principles be such as are prior in our knowledge, but such as are prior and more known in themselves. It is allowable to prefer the former only in the case of scholars who are incompetent to understand the latter; but in such a case they get nothing which really elucidates the essence of the object.[3] This rule, indeed, follows from the axiom that Definition consists of the genus and the specific differences: for the genus is

[1] *Anal. Post.* ii. c. 9: ἔστι δὲ τῶν μὲν ἕτερόν τι αἴτιον, τῶν δ' οὐκ ἔστιν. ὥστε δῆλον ὅτι καὶ τῶν τί ἐστι τὰ μὲν ἄμεσα καὶ ἀρχαί εἰσιν, ἃ καὶ εἶναι καὶ τί ἐστιν ὑποθέσθαι δεῖ ἢ ἄλλον τρόπον φανερὰ ποιῆσαι. Cf. preceding note and *Anal. Post.* ibid. 94, a, 9: ὁ δὲ τῶν ἀμέσων ὁρισμὸς θέσις ἐστὶ τοῦ τί ἐστιν ἀναπόδεικτος. *Metaph.* ix. 6, 1048, a. 35: δῆλον δ' ἐπὶ τῶν καθέκαστα τῇ ἐπαγωγῇ ὃ βουλόμεθα λέγειν, καὶ οὐ δεῖ παντὸς ὅρον ζητεῖν, ἀλλὰ καὶ τὸ ἀνάλογον συνορᾶν; and above, p. 253. To Induction also belongs the process which is described in *De An.* i. 1, 402, b, 16: ἔοικε δ' οὐ μόνον τὸ τί ἐστι γνῶναι χρήσιμον εἶναι πρὸς τὸ θεωρῆσαι τὰς αἰτίας τῶν συμβεβηκότων ταῖς οὐσίαις . . . ἀλλὰ καὶ ἀνάπαλιν τὰ συμβεβηκότα συμβάλλεται μέγα μέρος πρὸς τὸ εἰδέναι τὸ τί ἐστιν: for a definition is only correct when it explains all the συμβεβηκότα (*i.e.* the καθ' αὑτὸ συμβεβηκότα, the essential properties; *vid.* p. 214, n. 3 *supra*) of an object. On immediate knowledge, cf. p. 246 sqq., 197 sqq.

[2] Of course with the exception of the ἄμεσα just mentioned, *i.e.* that which is conditional on no principle other than itself.

[3] *Top.* vi. 4; cf. p. 205, n. 2 *supra*.

prior and more certain than its contents, and the differentiæ are prior to the species which they mark off.[1] Inversely we obtain the same result: for if Definition consists in specifying the aggregate determining characteristics by which the object is conditioned in its essential nature, it must include the genus and the differentiæ, for these are simply the scientific expression of those causes which in their coincidence produce the object.[2] But these, in their turn, are definitely related to one another in an order of superiority and inferiority. The genus is narrowed by the first of the differentiating marks; then the species so produced is further narrowed by the second, and so on. It is not, therefore, a matter of indifference in what order the separate properties shall follow in any definition.[3] A definition, in fact, implies not a mere enumeration of the essential marks,[4] but also the completeness[5] and the proper sequence of them.[6] Bearing this in mind, it will be found that in the descent from universals to particulars the practice of

[1] *Loc. cit.* 141, b, 28; cf. *supra*, p. 215, n. 1, 216, n. 1.

[2] This follows from the passages cited *supra*, p. 173, n. 2, compared with pp. 215, n. 1, 244, n. 3. By reason of this connection *Topics* vi. 5 sq., immediately after the remarks on the *πρότερα καὶ γνωριμώτερα*, gives rules for the correct determination of the definition by *γένος* and *διαφοραί*.

[3] *Anal. Post.* ii. 13, 96, b, 30; cf. 97, a, 23 sqq.

[4] Τὰ *ἐν τῷ τί ἐστι κατηγορούμενα, αἱ τοῦ γένους διαφοραί.* It is obvious that only such things can occur in the definition; cf. p. 217 sqq., *Anal. Post.* ii. 13, 96, b, 1 sqq., i. 23, 84, a, 13., *Top.* vi. 6; and other passages WAITZ on *Categ.* 2, a, 20.

[5] It has been already remarked on p. 246, that the number of intermediate grades must be a limited one. Cf. also *Anal. Post.* ii. 12, 95, b, 13 sqq.

[6] *Anal. Post.* ii. 13, 97, a, 23: *εἰς δὲ τὸ κατασκευάζειν ὅρον διὰ τῶν διαιρέσεων τριῶν δεῖ στοχάζεσθαι, τοῦ λαβεῖν τὰ κατηγορούμενα ἐν τῷ τί ἐστι, καὶ ταῦτα τάξαι τί πρῶτον ἢ δεύτερον, καὶ ὅτι ταῦτα πάντα.*

progressive division is our surest method, while a correspondingly gradual building up of concepts is equally proper to the upward process towards the universal.[1] And thus Plato's method, though Aristotle could not accept it as a satisfactory process for deducing definitions, was yet recognised and further worked out by him as a means to their discovery.[2]

Supposing, then, that we have defined and surveyed the whole field of the knowledge of concepts on this method, we shall obtain a system of ideas such as Plato looked for,[3] carrying us in an unbroken line from the Summa Genera through all the intermediate members down to the lowest species. And since scientific deduction must consist in the specification of causes, and since each specific difference in the upward scale implies the introduction of a new cause, and every added cause creates a corresponding differentia, it results that our logical structure must exactly correspond with the actual sequence and concatenation of causes. Plato never undertook actually to set forth that derivation of everything knowable out of unity, which he saw ahead as the end and goal of science. Aristotle

[1] Aristotle includes both, without further separating them, in the concept of Division. For this he gives full rules in *Anal. Post.* ii. 13, 96, b, 15–97, b, 25; *Top.* vi. 5, 6; *Part. Anim.* i. 2, 3. Like Plato (ZELLER, *Ph. d. Gr.* pt. i. p. 524 sq.), he also considers that the most important thing is that the division should be continuous, should omit no intermediate grade, and should totally exhaust the object to be divided; and lastly (to which Plato devoted less attention), that it should not proceed by means of deduced or contingent differences, but by the essential ones. Cf. preceding note.

[2] Two further rules, contained especially in the sixth book of the *Topics*—where he enumerates at length the mistakes made in defining—are omitted here.

[3] See ZELL. *ibid.* p. 525, 588.

considers such a demonstration to be quite impracticable. The highest genera, according to him, are no more capable of being derived from any one higher principle than are the special postulates of each science.[1] They are connected, not by any complete community of nature, but only by a kind of analogy,[2] and the reason

[1] *Anal. Post.* i. 32, 88, a, 31 sqq., &c.; *vid. supra* p. 246. sqq. Aristotle says, in *Metaph.* xii. 4, 1070, b, 1 (παρὰ γὰρ τὴν οὐσίαν καὶ τἄλλα τὰ κατηγορούμενα οὐθέν ἐστι κοινόν), that the categories especially can be deduced neither from one another nor from a higher common genus: v. 28, 1024, b, 9 (where the same is said of Form and Matter); xi. 9, 1065, b, 8; *Phys.* iii. 1, 200, b, 34; *De An.* i. 5, 410, a, 13; *Eth. N.* i. 4, 1096, a, 19, 23 sqq.; cf. TRENDELENBURG, *Hist. Beitr.* i. 149 sq. The concepts, which one would be most inclined to consider the highest genera, 'Being' and 'One,' are no γένη: *Metaph.* iii. 3, 998, b, 22; viii. 6, 1045, b, 5; x. 2, 1053, b, 21; xi. 1, 1059, b, 27 sq.; xii. 4, 1070, b. 7; *Eth. N. ibid.*; *Anal. Post.* ii. 7, 92, b, 14; *Top.* iv. 1, 121, a, 16, c. 6, 127, a, 26 sqq. Cf. TRENDELENBURG, *loc. cit.* 67; BONITZ and SCHWEGLER on *Metaph.* iii. 3 (more on p. 276 *infra*). Therefore the principle 'that eventually everything is contained in a single highest concept as in a common genus,' which STRÜMPELL, *Gesch. d. theor. Phil. d. Gr.* p. 193, gives as an assertion of Aristotle, is not really Aristotelian.

[2] In *Metaph.* v. 6, 1016, b, 31, four kinds of Unity are distinguished (somewhat different is the other fourfold enumeration in *Metaph.* x. 1, in which the unity of analogy does not occur): the unity of number, of species, of genus, and of analogy. Each of these unities includes in it the subsequent unities (*i.e.* that which in number is one is also one in species, &c.); but not *vice versa.* Hence the unity of Analogy can occur even in those things which belong to no common genus (cf. *Part. An.* i. 5, 645, b, 26: τὰ μὲν γὰρ ἔχουσι τὸ κοινὸν κατ' ἀναλογίαν, τὰ δὲ κατὰ γένος, τὰ δὲ κατ' εἶδος). It occurs in everything ὅσα ἔχει ὡς ἄλλο πρὸς ἄλλο. It consists in identity of relation (ἰσότης λόγων), and hence supposes at least four members (*Eth. N.* v. 6, 1131, a, 31). Its formula is: ὡς τοῦτο ἐν τούτῳ ἢ πρὸς τοῦτο, τόδ' ἐν τῷδε ἢ πρὸς τόδε (*Metaph.* ix. 6, 1048, b, 7; cf. *Poet.* 21, 1457, b, 16). It is found not only in quantitative identity, such as arithmetical and geometrical (*Eth. N.* v. 7, 1131, b, 12, 1132, a, 1), but also in qualitative identity, such as similarity (*Gen. et Corr.* ii. 6, 333, a, 26 sqq.), or in identity of operation (cf. *Part. An.* i. 5, 645, b, 9: τὸ ἀνάλογον τὴν αὐτὴν ἔχον δύναμιν; *ibid.* i. 4, 644, b, 11; ii. 6, 652, a, 3), and in fact in all categories (*Metaph.* xiv. 6, 1093, b, 18). Besides those in the passages just mentioned, other instances are given in *De Part.*

why the sciences are not all one, is just because each class of actual existences has its own peculiar sort of knowledge which applies to it.[1] If it be true that among the sciences we find one which is a science of first principles—the 'First Philosophy'—we must not expect it to develop its subject-matter out of any single principle of being. On the contrary, we shall find it necessary, before proceeding to any further researches, that we should inquire into all the most general points of view from which the world of actual existence can be considered, or, in other words, enumerate the highest generic concepts themselves.

This it is with which the doctrine of the Categories is concerned, and these form accordingly the true connecting link, in Aristotle's philosophic system, between Logic and Metaphysics.

*Anim.*, *Anal. Pri.* i. 46, 51, b, 22, and *Rhet.* iii. 6 *fin.* That which cannot be deduced from any other thing (the highest principles), must be explained by analogy, as, for example, the concepts of Matter, of Form, &c.; cf. *Metaph.* ix. 6 (*vid. sup.* p. 269, n. 1); xii. 4, 1070, b, 16 sqq., and *Phys.* i. 7, 191, a, 7. This is the account given by TRENDELENBURG in his *Hist. Beitr.* i. 151 sqq. 'Analogy' is of special importance to Aristotle in his study of Natural History; see thereon *infra*, and cf. MEYER, *Arist. Thierkunde*, 334 sqq.

[1] *Anal. Post.* i. 28 *init.*: *μία δ' ἐπιστήμη ἐστὶν ἡ ἑνὸς γένους . . . ἑτέρα δ' ἐπιστήμη ἐστὶν ἑτέρας, ὅσων αἱ ἀρχαὶ μήτ' ἐκ τῶν αὐτῶν μήθ' ἕτεραι ἐκ τῶν ἑτέρων.* *Metaph.* iii. 2, 997, a, 21: *περὶ οὖν τὸ αὐτὸ γένος τὰ συμβεβηκότα καθ' αὑτὰ τῆς αὐτῆς [ἐπιστήμης] ἐστὶ θεωρῆσαι ἐκ τῶν αὐτῶν δοξῶν.* *Ibid.* iv. 2, 1003, b, 19: *ἅπαντος δὲ γένους καὶ αἴσθησις μία ἑνὸς καὶ ἐπιστήμη.* *Ibid.* 1004, a, 3: *τοσαῦτα μέρη φιλοσοφίας ἐστὶν ὅσαιπερ αἱ οὐσίαι . . . ὑπάρχει γὰρ εὐθὺς γένη ἔχοντα τὸ ἓν καὶ τὸ ὄν· διὸ καὶ αἱ ἐπιστῆμαι ἀκολουθήσουσι τούτοις.* The relation between this and the concept of the First Philosophy will be examined *infra*.

# CHAPTER VI

## INTRODUCTORY INQUIRIES TOUCHING ARISTOTLE'S METAPHYSICS

### 1. *The Categories*[1]

All the objects of our thought fall, according to Aristotle, under one or other of the following ten concepts: Substance, Quantity, Quality, Relation, Where, When, Situation, Possession, Action, Passion.[2]

These highest concepts—the Categories[3]—neither mean to him merely subjective forms of thought, which would be utterly foreign to his Realism, nor are they merely concerned with logical relations. What they ex-

[1] TRENDELENBURG, *Gesch. d. Kategorieenlehre* (*Hist. Beitr.* i. 1846), pp. 1–195, 209–217; BONITZ on Aristotle's Categories, *Aristotel. Stud.* vi. H. (first published in the *Sitzungsbericht der Wiener Akad.*, *Hist.-philol. Kl.* 1853, B. x. 591 sqq.); PRANTL, *Gesch. d. Log.* i. 182 sqq., 90 sq.; SCHUPPE, *Die arist. Kategorieen.* (*Gymn. progr. Gleiwitz*, 1866); cf. BRENTANO'S essay *Von der mannigfachen Bedeutung des Seienden nach Ar.*, published in 1862.

[2] *Categ.* c. 2 *init.*: τῶν λεγομένων τὰ μὲν κατὰ συμπλοκὴν λέγεται, τὰ δ' ἄνευ συμπλοκῆς. C. 4 *init.*: τῶν κατὰ μηδεμίαν συμπλοκὴν λεγομένων ἕκαστον ἤτοι οὐσίαν σημαίνει ἢ ποσὸν ἢ ποιὸν ἢ πρός τι ἢ ποῦ ἢ ποτὲ ἢ κεῖσθαι ἢ ἔχειν ἢ ποιεῖν ἢ πάσχειν. *Top.* i. 9 *init.*: μετὰ τοίνυν ταῦτα δεῖ διορίσασθαι τὰ γένη τῶν κατηγοριῶν, ἐν οἷς ὑπάρχουσιν αἱ ῥηθεῖσαι τέτταρες [ὅρος, γένος, ἴδιον, συμβεβηκός]. ἔστι δὲ ταῦτα τὸν ἀριθμὸν δέκα, τί ἐστι, ποσὸν, ποιὸν, πρός τι, ποῦ, ποτὲ, κεῖσθαι, ἔχειν, ποιεῖν, πάσχειν.

[3] Aristotle uses various expressions to designate them (cf. TRENDELENBURG, *loc. cit.* at p. 6 sqq., and BONITZ, *ut supra*, at p. 23 sqq., and in the *Ind. Arist.*

press is rather the different forms of the Actual.[1] Not all forms of the Actual, however, are categories or divisions of categories; but only those which represent the different formal points of view under which the Actual may be treated. Therefore he does not reckon among the

378, a, 5 sqq.). He calls them τὰ γένη (*scilicet*, τοῦ ὄντος, cf. *De An.* i. 1, 402, a, 22), τὰ πρῶτα *Metaph.* vii. 9, 1034, b, 7), also διαιρέσεις (*Top.* iv. 1, 120, b, 36, 121, a, 6), and πτώσεις (*Metaph.* xiv. 2, 1089, a, 26, with which cf. *Eth. Eud.* i. 8, 1217, b, 29), τὰ κοινὰ πρῶτα (*Anal. Post.* ii. 13, 96, b, 20, and *Metaph.* vii. 9, 1034, b, 9); but most frequently κατηγορίαι, κατηγορήματα, γένη or σχήματα τῶν κατηγοριῶν (τῆς κατηγορίας).—BONITZ (with whom LUTHE, *Beitr. zur Logik*, ii. 1 sqq. agrees) rightly explains the last expression by simply translating κατηγορία = 'assertion'; and consequently γένη or σχήματα τ. κατ. = 'the chief genera or fundamental forms of assertion,' = 'the various senses in which an object can be spoken of.' The same meaning is conveyed also by the shorter κατηγορίαι = 'the various modes of assertion,' or κατηγορίαι τοῦ ὄντος (*Phys.* iii. 1, 200, b, 28; *Metaph.* iv. 28, 1024, b, 13, ix. 1, 1045, b, 28, xiv. 6, 1093, b, 19, &c.); the latter phrase implying that every such assertion is concerned with being.—The meaning of 'predicate,' which κατηγορία often has in other places, and which BRENTANO (*loc. cit.* 105 sq.) and SCHUPPE give it here, does not suit the Aristotelian categories, for the latter designate the different senses of the τὰ κατὰ μηδεμίαν συμπλοκὴν λεγόμενα, whereas the predicate, as such, can only occur in the proposition. Hence it is needless to ask the question (over which SCHUPPE, *loc. cit.* 21 sq., gives himself unnecessary trouble) in what sense 'Substance,' which is not a predicate-concept (*vide infra*, ch. vii. *init.*), can belong to the scheme of the categories. Any concept becomes a predicate by being asserted of something, and this may occur even with concepts expressing substance (cf. *Metaph.* vii. 3, 1029, a, 23, τὰ μὲν γὰρ ἄλλα τῆς οὐσίας κατηγορεῖται αὕτη δὲ τῆς ὕλης). For instance, in the proposition, 'this man is Socrates,' Socrates is predicate. From this *logical* function, which a substance-concept may take on *in a proposition*, it by no means follows that such an idea, when regarded out of this special relation and with reference solely to the content of the idea itself, is to be regarded as signifying anything dependent, or in the nature of a property or συμβεβηκός. —STRÜMPELL is mistaken in saying (*Gesch. d. theor. Phil. b. d. Griechen*, p. 211) that the categories treat of the various ways of predicating or the distinctions to be drawn in the ways of combining concepts, though in other respects he correctly apprehends the merely formal character of the categories.

[1] *Metaph.* v. 7, 1017, a, 22:

categories either those concepts which are so universal as to be predicable of things of the most different kinds, and to have a different meaning according to the relation in which they are used (such as the concepts of Being and of Unity [1]), or any of those more definite expressions which concern the concrete condition of

καθ' αὑτὰ δὲ εἶναι λέγεται ὅσαπερ σημαίνει τὰ σχήματα τῆς κατηγορίας· ὁσαχῶς γὰρ λέγεται, τοσαυταχῶς τὸ εἶναι σημαίνει (cf. *Eth. N.* i. 4, 1096, a, 23). Hence the categories are called κατηγορίαι τοῦ ὄντος (see preceding note). That of which they represent the various meanings is the ὄν (*Metaph.* vi. 2 *init.* ix. 1, 1045, b, 32; *De An.* i. 5, 410, a, 13: ἔτι δὲ πολλαχῶς λεγομένου τοῦ ὄντος, σημαίνει γὰρ τὸ μὲν τόδε τι, &c.); cf. *Ind. Arist.* 378, a, 13 sqq.—Logical relations of concepts, on the other hand (such as ὅρος, γένος, ἴδιον, συμβεβηκὸς), are not expressed in separate categories, but run indifferently through them all. In answer to the question τί ἐστι; for instance, you may get according to circumstances an οὐσία, a ποσὸν, &c.: see *Top.* i. 9.—As little are the categories concerned with the opposition of true and false, which has reference, not to the nature of things, but to our relation to them (*Metaph.* vi. 4, 1027, b, 29). Yet Aristotle sometimes does make, after all, an ontological application of the categories, as when, for example, he deduces the different kinds of change from the circumstance that one kind is concerned with things as to their substance, another as to their quality, a third as to quantity, and a fourth as to place; cf. following note.

[1] These two concepts (which κατὰ πάντων μάλιστα λέγεται τῶν ὄντων, according to *Metaph.* iii. 3, 998, b, 22 sqq.; x. 2, 1053, b, 16 sqq.; viii. 16, 1045, b, 6, cf. *supra*, p. 272, n. 1), are no γένη, but predicates which may be applied to all that is possible. That they cannot be genera, Aristotle proves in *Metaph.* iii. 3, by observing that 'a genus can never be predicated of the mark which stands to it as a specific difference, but that Being and Unity must be predicable of every mark which can be added to the ὂν and the οὐσία.'—Both the concepts are used in various meanings. *Metaph.* v. 7, gives *four* senses of 'Being,' while ix. 10 (cf. xiv. 2, 1089, a, 26, where the κατὰ συμβεβηκὸς λεγόμενον ὂν is omitted) gives three, one of these being that κατὰ τὰ σχήματα τῶν κατηγοριῶν, which suggests that a different kind of Being corresponds to each category, and therefore implies that 'Being' cannot as such coincide with any single category. The same is true of 'Unity': τὸ ἓν ἐν παντὶ γένει ἐστί τις φύσις, καὶ οὐθενὸς τοῦτό γ' αὐτὸ ἡ φύσις, τὸ ἓν (= 'there is nothing whose essence consists in Unity as such'). It likewise occurs in all categories,

any object and its physical or ethical properties.[1] Equally does he exclude from the number of categories those general metaphysical conceptions which serve to explain concrete peculiarities and processes, such as the conceptions of the Actual and the Possible, of Form and Matter, and of the four kinds of Cause.[2] The

but adds to the concept of the object, of which it is predicated, no new mark; and Aristotle concludes from this, ὅτι ταὐτὸ σημαίνει πως τὸ ἓν καὶ τὸ ὂν (*Metaph.* x. 2, 1054, a, 9 sqq.), the τὸ ἓν καὶ τὸ ὂν ταὐτὸν καὶ μία φύσις τῷ ἀκολουθεῖν ἀλλήλοις . . . ἀλλ' οὐχ ὡς ἑνὶ λόγῳ δηλούμενα (*Metaph.* iv. 2, 1003, b, 22), and that both have the same extension (ἀντιστρέφει, xi. 3, 1061, a, 15 sq., cf. vii. 5, 1030, b, 10, c. 16, 1040, b, 16). Upon 'Unity,' cf. also *Metaph.* x. 1 sqq. (where in particular 'unity of measure' is treated of), and the references at p. 272, n. 2 *supra*; and see also HERTLING, *De Arist. notione unius*, Berl. 1864. As to the ὄν, see particularly BRENTANO, *Von der mannigfachen Bedeutung des Seienden.*

[1] For this reason such a concept as Movement (or Change) is not put among the categories; it is rather, according to Aristotle, a physical concept which, through the different categories, receives its further determination as substantial change, qualitative or quantitative change, or movement in space (*Phys.* v. 1 *fin.*, c. 2 *init.*, *ibid.* 226, a, 23, iii. 1, 200, b, 32; *Gen. et Corr.* i. 4, 319, b, 31; *De Cælo*, iv, 3, 310, a, 23; *Metaph.* xii. 2, 1069, b, 9; more about this *infra*). He allows that, looked at in itself, it may be put in the category of Action and Passion (*Top.* iv. 1, 120, b, 26; *Phys.* v. 2, 225, b, 13, iii. 1, 201, a, 23; *De An.* iii. 2, 426, a, 2; TRENDELENBURG, *Hist. Beitr.* i. 135 sqq.), and in this sense it is even used in *Metaph.* viii. 4, 1029, b, 22, to illustrate how the categories other than Substance have a substratum, yet it does not itself *become* a category. Still less would it be a category if we were to accept the belief of the later Peripatetics (which is not established by *Metaph.* v. 13, 1020, a, 26; SIMPL. *Categ.* 78, δ, § 29 Bas.) that it belonged to the category of the ποσὸν, or as others preferred (SIMPL. *ibid.* 35, δ, § 38) to the πρός τι.—So also, when Eudemus (*Eth. Eud.* 1217, b, 26) gives Motion (in place of Action and Passion) among the categories, it is not Aristotelian. Other Peripatetics, notably Theophrastus, said more correctly, that it 'runs through many categories' (SIMPL. *ibid.* 35, δ, § 38; *Phys.* 94, a).—In the same way 'the Good' is to be found in various categories (*Eth. N.* i. 4, 1096, a. 19, 23).

[2] None of these concepts is reckoned among the categories or comprised under any one of them. On the contrary, when Aristotle is considering the various meanings of 'Being,' he mentions the distinction of δυν-

purpose of 'categories' is not to describe things by their actual qualities, nor yet to set forth the general conceptions which are needful for this purpose. They are confined to pointing out the different sides which may be kept in view in any such description. In Aristotle's intention, they are meant to give us, not real conceptions, but only the framework into which all real conceptions are to be set, whether they are confined to one division of the framework or extend to several.[1]

δμει and ἐντελεχείᾳ, with the distinction of truth and falsity, as matters to be superadded to the distinctions expressed by the categories (*Metaph.* v. 7, 1017, a, 7, 22, 31, 35, vi. 2 *init.*, ix. 10 *init.*, c. 1, 1045, b, 32, xiv. 2, 1089, a, 26; *De An.* i. 1, 402, a, 22, cf. TRENDELENBURG, *Gesch. der Categorieenlehre*, *ut supra*, p. 157 sqq.; BONITZ, *ut supra*, p. 19 sq.), but themselves running through the various categories indifferently (*Phys.* iii. 1, 200, b, 26; *Metaph.* ix. 10 *init.*: τὸ δὲ κατὰ δύναμιν καὶ ἐνέργειαν τούτων). Aristotle does not tell us why they cannot be reckoned among the categories; but the reason seems to be that indicated above, viz. that these ideas do not merely relate, like those of substance, quality, &c., to the formal character and the formal differences of that which falls under them, but designate definite real relations of actual being.

[1] Thus also BRANDIS, ii. b, 394 sqq. On the other hand TRENDELENBURG, *ibid.* 162 sq. explains the absence of 'Possibility and Actuality' from the categories by saying that the latter are 'separated predicates,' whilst the former is 'no real predicate.' It seems, however, that precisely the opposite is the case. The categories are *not themselves* directly taken as predicates, but only as designating the *place* of certain predicates in the scale; whereas the distinction of Possible and Actual is based on real and definite facts, the contrast between the different conditions of development in individual things, and the opposition in the universe as a whole between the corporeal and the spiritual. The one kind of distinction is only an abstract, metaphysical expression of the other. But it is not possible entirely to agree with BONITZ when he says on p. 18, 21, that the categories 'are only meant to render possible a survey of what is contained in the empirical data,' and hence that 'such concepts are excluded as extend beyond the comprehension of empirical data, to any kind of explanation of them.' For the concept of Motion is given by experience just as much as that of Action and Passion, and the concept of Substance is as valuable for 'explaining the data' as that of form and matter, or of

Of the completeness of this framework, Aristotle is convinced,[1] but he nowhere tells us how he came to set

actuality and possibility.—Nor does it seem possible to say with BRENTANO (*loc. cit.* p. 82 sq.), that the categories are 'real concepts,' if by this we are to understand such concepts as designate the common object-matter of a series of experiences, such as are the concepts of weight, extension, thought, &c. For those very categories which are most frequently and universally applied—substance, quantity, quality, relation, action, and passion—designate merely formal relations, and hence are adapted to cover and apply to a content of the most diverse character; and though this is not so absolutely true of others—such as ποῦ, ποτὲ, or κεῖσθαι—that peculiarity only proves that Aristotle was not able strictly to carry out through them all the point of view with which he started his category-scheme as a whole. BRENTANO himself, at p. 131 sq., admits that 'the distinction of the categories is not a real distinction.'

[1] PRANTL, *Gesch. d. Log.* i. 204 sqq., denies that Aristotle adopted any absolutely fixed number of categories; but it is clear, not only from the enumerations given at p. 274, n. 2 and p. 282, n. 3, but also from many other expressions, that he did. Thus we have in *Soph. El.* c. 22, *init.*: ἐπείπερ ἔχομεν τὰ γένη τῶν κατηγοριῶν—namely, the ten enumerated in *Top.* i. 9, to which at c. 4, 166, b, 14, after mentioning τὶ (ταὐτὸ), ποιὸν, ποσὸν, ποιοῦν, πάσχον, διακείμενον (really only a kind of ποιὸν, the διάθεσις: see *Categ.* c. 8, 10, a, 35 sqq. *Metaph.* v. 20), he refers back with the words: καὶ τἆλλα δ' ὡς διῄρηται πρότερον. *De An.* i. 1, 402, a, 24: πότερον τόδε τι καὶ οὐσία ἢ ποιὸν ἢ ποσὸν ἢ καί τις ἄλλη τῶν διαιρεθεισῶν κατηγοριῶν. *Ibid.* c. 5, 410, a, 14: σημαίνει γὰρ τὸ μὲν τόδε τι τὸ δὲ ποσὸν ἢ ποιὸν ἢ καί τινα ἄλλην τῶν διαιρεθεισῶν κατηγοριῶν. *Anal. Pri.* i. 37: τὸ δ' ὑπάρχειν τόδε τῷδε . . . τοσαυταχῶς ληπτέον ὁσαχῶς αἱ κατηγορίαι διῄρηνται. *Metaph.* xii. 1, 1069, a, 20: πρῶτον ἡ οὐσία, εἶτα τὸ ποιὸν, εἶτα τὸ ποσόν; vi. 2, 1026, a, 36: τὰ σχήματα τῆς κατηγορίας, οἷον τὸ μὲν τί, τὸ δὲ ποιὸν, τὸ δὲ ποσὸν, τὸ δὲ ποῦ, τὸ δὲ ποτὲ, καὶ εἴ τι ἄλλο σημαίνει τὸν τρόπον τοῦτον; vii. 4, 1030, a, 18: καὶ γὰρ τὸ τί ἐστιν ἕνα μὲν τρόπον σημαίνει τὴν οὐσίαν καὶ τὸ τόδε τι, ἄλλον δὲ ἕκαστον τῶν κατηγορουμένων, ποσὸν, ποιὸν καὶ ὅσα ἄλλα τοιαῦτα; xii. 4, 1070, a, 33: it is a question of, πότερον ἕτεραι ἢ αἱ αὐταὶ ἀρχαὶ στοιχεῖα τῶν οὐσιῶν καὶ τῶν πρός τι, καὶ καθ' ἑκάστην δὲ τῶν κατηγοριῶν ὁμοίως. Likewise in *Metaph.* vii. 9, 1034, b, 9, xiv. 2, 1089, a, 7; *Phys.* iii. 1, 200, b, 26, after mentioning some of the categories, he refers to the rest with a mere '*αἱ ἄλλαι κατηγορίαι*,' as to something well known, and in *Anal. Post.* i. 22, 83, b, 12, a, 21, the impossibility of an infinitely extended argument is proved by the assertion that the number of categories is limited to those there named. The completeness of Aristotle's list of categories is also supposed by the proof referred to at the end of p. 276, n. 2, that

out these categories and no others;[1] and among the categories themselves there is so little indication of any fixed principles for their evolution[2] that we are

there are only three kinds of motion (in the narrower sense), qualitative, quantitative, and local (*Phys.* v. 1 sq.), inasmuch as that theorem is proved by the process of exclusion. 'Motion,' Aristotle argues, 'does not occur in the categories of substance, &c.: therefore only those three categories remain.'

[1] Even in the lost writings no such demonstration seems to have occurred; otherwise the early commentators would have appealed to it. Whereas, on the contrary, SIMPL. *Schol. in Ar.* 79, a, 44, says: *ὅλως οὐδαμοῦ περὶ τῆς τάξεως τῶν γενῶν οὐδεμίαν αἰτίαν ὁ Ἀριστοτέλης ἀπεφήνατο.*

[2] To TRENDELENBURG (in his dissertation *De Arist. Categoriis* [Berl. 1833] and the *Elementa Logices Aristotelicæ*, p. 54) belongs the credit of having first endeavoured to find one. But even his repeated explanation in *Hist. Beitr.* i. 23 sqq., 194 sq. has not persuaded us that he has really succeeded in doing so. It seems rather that the objections which RITTER, iii. 80, and still more exhaustively BONITZ, *loc. cit.* 35 sqq., have brought against his opinion, are well justified. TRENDELENBURG (and after him BIESE, *Phil. d. Arist.* i. 54 sq.) believes that in setting out these ten genera Aristotle was proximately influenced by grammatical distinctions. He suggests that *οὐσία* corresponds to the substantive, *ποσὸν* and *ποιὸν* to the adjective; with *πρός τι* correspond such forms of expression as those referred to in *Categ.* c. 7; *ποῦ* and *ποτὲ* are represented by the adverbs of place and time; the last four categories are to be looked for in the verb, for *ποιεῖν* and *πάσχειν* translate into a general concept the force of the active and passive voices, as *κεῖσθαι* renders one side of the intransitive, and *ἔχειν* the special force of the Greek perfect.—But, in the first place, as BONITZ, p. 41 sqq., fully proves, Aristotle himself nowhere gives any indication of his having arrived at his categories in this way. On the contrary, he does not distinguish the parts of speech on any such method as that which Trendelenburg's theory of the categories would presuppose, for he nowhere expressly distinguishes the adverbs, he treats the adjective (as *ῥῆμα*) along with the verb, and in fact the only 'parts of speech' which he names (apart from the article and conjunction) are the *ὄνομα* and the *ῥῆμα*. It is therefore not probable that grammatical forms to which, as 'parts of speech' he paid no attention, should nevertheless have guided him in distinguishing the classes of concepts. And, again, the two series do not in fact correspond to any such extent as we should have expected if Trendelenburg's supposition were correct. For 'quantity' and 'quality' may just as well be expressed by substantives (*e.g.* *λευκότης*, *θερμότης*, &c., *Categ.* c. 8, 9, a, 29) or verbs (*λελεύκωται*,

reduced to supposing that he obtained them empirically, by putting together the main points of view from which the data of experience can be practically treated. It is true that a certain logical progress is to be found among them. We begin with the Substantial—the Thing. Next in order to this, he deals with Quali-

&c.) as by adjectives; 'action and passion' as well by substantives (πρᾶξις, πάθος, &c.) as by verbs; 'time' not only by adverbs but also by adjectives (χθιζὸς, δευτεραῖος, &c.); very many substantives designate no substance (*Categ.* c. 5, 4, a, 14, 21); and for 'relation' a corresponding grammatical form cannot be found.—BRENTANO, *loc. cit.* p. 148 sqq., also seeks to defend the Aristotelian categories against the charge of having no scientific derivation and suggests another scheme. He believes that in arranging them Aristotle first distinguished 'substance' from 'accidents,' and, among the latter, distinguished the *absolute* from the *relative*; and that he went on to divide the former into (1) *inherences* (material = ποσὸν, and formal = ποιόν); (2) *affections* (ποιεῖν and πάσχειν, to which, at one time, Aristotle added ἔχειν); (3) *external circumstances* (ποῦ and ποτὲ, and, for a time, κεῖσθαι). The question is not, however, whether it is *possible* to bring the ten categories into some logical scheme (for that could be done with any series, unless it were merely put together at haphazard), but whether *Aristotle arrived at them* by means of a logical deduction. And against any such supposition there are two facts: first, that Aristotle in speaking of the categories, never indicates such a deduction, and next, that none can be found into which they naturally fit. Even in Brentano's ingenious scheme, this is not the case. If the ten categories had come about in the way he suggests, they would have been enumerated by Aristotle in a corresponding order. Instead of that, the πρός τι, which, according to Brentano, should come last, stands in the middle in every enumeration (see p.274, n. 1 and p. 282, n. 3), and its regular place (the only exception being *Phys.* v. 1) is immediately after the '*inherences*.' After it, again, the '*affections*' do not follow (as they should according to Brentano's order), but the '*external circumstances*.' Nor is the distinction of *inherences* and *affections* itself Aristotelian.—So far as a logical disposition of the categories *ex post facto* is concerned, ZELLER gives on p. 288 *infra*, that which he prefers, although he does not believe that Aristotle arrived at his list of categories by any method in which he had in his mind beforehand either that or any other logical scheme into which they were to fit.

ties: first (in the *ποσὸν* and *ποιὸν*), those qualities which belong to a thing in itself, and then (in the *πρός τι*), those which belong to a thing in its relation to other things. From these he passes to the external conditions of sensible existence—Space and Time. And he ends the list with the concepts which express changes and the conditions thereby produced. This cannot be called a deduction in the strict sense; for that, according to Aristotelian principles, was not possible in the case of the highest general conceptions at all.[1] In fact, the order of the categories is not always the same.[2] It even seems that ten is somewhat arbitrarily fixed as their number. Aristotle himself so far recognises this, that in his later writings he passes over the categories of Possession and Situation, in places where he apparently intends to give a complete enumeration.[3] It is possible that it may have been the example of the Pythagoreans,[4] and the predilection

[1] *Vide supra*, pp. 246 and 272.

[2] Examples will be found in what follows, and also at p. 279, n. 1. The most striking thing with regard to this is that in *Cat.* c. 7, contrary to the otherwise constant rule, and even to the order given in c. 4, *πρός τι* precedes *ποιόν*. No satisfactory reason can be found for this, but it would be rash to conclude anything from it against the genuineness of the work, since a later writer would probably be *less* likely to permit a divergence from the order given than would Aristotle himself, for whom it was not firmly established.

[3] *Anal. Post.* i. 22, 83, a, 21: ὥστε ἢ ἐν τῷ τί ἐστιν [κατηγορεῖται] ἢ ὅτι ποιὸν ἢ ποσὸν ἢ πρός τι ἢ ποιοῦν ἢ πάσχον ἢ ποῦ ἢ ποτὲ, ὅταν ἓν καθ' ἑνὸς κατηγορηθῇ. *Ibid.* b, 15: τὰ γένη τῶν κατηγοριῶν πεπέρανται· ἢ γὰρ ποιὸν ἢ ποσὸν ἢ πρός τι ἢ ποιοῦν ἢ πάσχον ἢ ποῦ ἢ ποτέ (the οὐσία to which the latter are opposed as συμβεβηκότα has been already mentioned). *Phys.* v. 1 *fin.*: εἰ οὖν αἱ κατηγορίαι διῄρηνται οὐσίᾳ καὶ ποιότητι καὶ τῷ ποῦ καὶ τῷ ποτὲ καὶ τῷ πρός τι καὶ τῷ ποσῷ καὶ τῷ ποιεῖν ἢ πάσχειν, ἀνάγκη τρεῖς εἶναι κινήσεις (cf. p. 279, n. 1 *fin.*). *Metaph.* v. 8, 1017, a, 24: τῶν κατηγορουμένων τὰ μὲν τί ἐστι σημαίνει, τὰ δὲ ποιὸν, τὰ δὲ ποσὸν, τὰ δὲ πρός τι, τὰ δὲ ποῦ τὰ δὲ ποτέ.

[4] See ZELL. *Ph. d. Gr.* pt. 1, 325.

for a decimal system inherited from them by the Platonists,[1] which made it at first seem to Aristotle natural that he should find a round number of categories. But we cannot well suppose any further connection between his doctrine and the Pythagorean;[2] nor is the conjecture[3] much more probable, that he borrowed his categories from the school of Plato.[4] It is true that almost all of them appear in Plato's writings;[5] but we cannot attribute any great weight to this coincidence, for the reason that in Plato they are merely used as occasion arises, without any attempt to arrive at a full enumeration of *all* the categories in one scheme.

Among the categories themselves, much the most

[1] ZELLER, *ibid.* p. 857 sqq.

[2] As PETERSEN supposed in *Philos. Chrysipp. Fundamenta*, p. 12.

[3] ROSE, *Arist. Libr. Ord.* 238 sqq.

[4] In the first place, there is no trace whatever of the ten categories among the Platonists; and it is not likely that information about so notable a point would neither have been transmitted through their writings nor through Chrysippus and other scholars of the Alexandrian period to the later Peripatetics, and through them to us. And again, the theory of the categories is so closely connected with the other opinions of Aristotle that it is not likely to have sprung up on other ground. Take, for example, merely the fundamental statements as to the *οὐσία* and its relation to properties, on which the whole division of the categories in Aristotle is based. These are certainly not Platonic; in fact it is one chief point of dispute between Aristotle and his master that the latter conceded to ideas of quality the position of substances and made the *ποιὸν* an *οὐσία*. —We might rather suppose (as UEBERWEG does in his *Logik*, § 47, at p. 100) that Aristotle was led to his theory of Categories in his recoil against the theory of Ideas, and, in particular, by the reflection that the Ideas only represented things under the form of substantiality, whereas things in the actual world exhibit many different forms of existence. But as this explanation itself presupposes the distinction of substance from properties, &c., too much importance must not be attached to the theory.

[5] See TRENDELENBURG, *Hist. Beitr.* i. 205 sqq.; BONITZ, *ut supra*, p. 56. PRANTL, *Gesch. d. Log.* i. 73 sqq., and ZELLER, *Ph. d. Gr.* pt. i. p. 589.

important is that of *Substance*, which may here be fitly treated at once in detail. Substance, in the strict sense, is individual Substance. That which can be set out in parts is a Quantum.[1] If these parts are divided, then the Quantum is a discrete Quantum, a multitude; if they are interdependent, then it is a constant Quantum, a *quantity*;[2] if they are in a definite position (*θέσις*), the quantity is extensive; if they are only in an order (*τάξις*) without position, then it is non-extensive.[3] The undivided, or the unity by means of which quantity is distinguished, is the measure of it. This is the distinguishing mark of quantity, that it is measurable and has a measure.[4] As *Quantitas* belongs to a divisible

[1] *Metaph.* v. 13 *init.*: ποσὸν λέγεται τὸ διαιρετὸν εἰς ἐνυπάρχοντα, ὧν ἑκάτερον ἢ ἕκαστον ἕν τι καὶ τόδε τι πέφυκεν εἶναι. The ἐνυπάρχοντα, however, are, the constituent parts as distinguished from the logical elements of the concept. Thus, *e.g.*, in *Metaph.* iii. 1, 995, b, 27, c, 3 *init.* he inquires whether the γένη or the ἐνυπάρχοντα are the highest principles; *ibid.* viii. 17 *fin.* the στοιχεῖον is defined as that εἰς ὃ διαιρεῖται [sc. τὶ] ἐνυπάρχον [Acc.] ὡς ὕλην. Similarly in viii. 2, 1043, a, 19, cf. *Gen. An.* i. 21, 729, b. 3: ὡς ἐνυπάρχον καὶ μόριον ὂν εὐθυς τοῦ γινομένου σώματος μιγνύμενον τῇ ὕλῃ. *Ibid.* c. 18, 724, a, 24: ὅσα ὡς ἐξ ὕλης γίγνεσθαι τὰ γιγνόμενα λέγομεν, ἔκ τινος ἐνυπάρχοντος . . . . ἐστίν. *Cat.* c. 2, 1, a, 24, c, 5, 3, a, 32, &c. (*Ind. Arist.* 257, a, 39 sqq.) The ποσὸν is consequently that which is made up of parts, like a body, and not of logical elements, like a concept. But since number and time are also ποσὰ, we must not suppose that these 'parts' are merely material ones and in *Metaph.* v. 13, the τόδε τι must be understood not of individual substance, but in a wider sense, as signifying anything numerically distinct (ἀριθμῷ ἕν).

[2] *Metaph.* v. 13 (where also ποσὸν καθ' αὑτὸ and κατὰ συμβεβηκός is spoken of). *Cat.* 6 *init.* TRENDELENBURG, *ibid.* p. 82, treats further of discrete and continuous quantities, with special reference to *Cat.* 6, *Phys.* v. 3, 227, a, 10 sqq. and *Metaph. loc. cit.*

[3] *Cat.* c. 6 *init.*, *ibid.* 5, a, 15 sqq. Aristotle does not here express the opposition of that which has and that which has not extension in any general form, but merely by means of examples (of the former—line, surface, body; of the latter—time, number, word).

[4] *Metaph.* x. 1, 1052, b, 15

and substantial whole, so *Qualitas* expresses the differences whereby the conceptual whole is divided; for under *Qualitas*, in the stricter sense of the word,[1] Aristotle understands nothing else but the distinguishing mark, or further determination wherein a given Universal particularises itself. As the two chief divisions of qualities, he notes those which express an essential distinction, and those which express a movement or activity.[2] Elsewhere he names four determinations of quality as the most important,[3] but these again fall

sqq.; *Cat.* c. 6, 4, b, 32. This follows immediately from the above definition of ποσόν: that which can be divided into parts can also be built up of parts and be measured by them.—Further marks of ποσὸν (*Cat.* c. 6, 5, b, 11 sqq.) are that nothing is opposed to it, and that it is what it is and neither more nor less, and that the concept of equality and inequality belongs peculiarly to it.

[1] The generic concepts (δεύτεραι οὐσίαι) are sometimes also called ποιὸν, or more correctly ποιὰ οὐσία (*Cat.* c. 5, 3, b, 13; cf. *Metaph.* vii. 1, 1039, a, 1); and sometimes the συμβεβηκότα are comprised under the same term (*Anal. Post.* i. 22, 83, a, 36).

[2] In *Cat.* c. 8 the concept of ποιότης is not explained except by reference partly to forms of speech and partly to examples. In *Metaph.* v. 14, 1020, b, 13, however, there is an enumeration of its different meanings thus: σχεδὸν δὴ κατὰ δύο τρόπους λέγοιτ' ἂν τὸ ποιὸν, καὶ τούτων ἕνα τὸν κυριώτατον· πρώτη μὲν γὰρ ποιότης ἡ τῆς οὐσίας διαφορά . . . τὰ δὲ πάθη τῶν κινουμένων ᾗ κινούμενα καὶ αἱ τῶν κινήσεων διαφοραί. To the first class belong, among other things, the qualitative distinctions of numbers; to the second, ἀρετὴ and κακία. With regard to the διαφορὰ see *supra*, p. 215, n. 1. Therefore Quality expresses a determination of form, for that is true of the διαφορά; *Metaph.* viii. 2, 1043, a, 19: ἔοικε γὰρ ὁ μὲν διὰ τῶν διαφορῶν λόγος τοῦ εἴδους καὶ τῆς ἐνεργείας εἶναι, ὁ δ' ἐκ τῶν ἐνυπαρχόντων τῆς ὕλης μᾶλλον.

[3] *Cat.* c. 8. The four εἴδη ποιότητος (besides which, we are told, 10, a, 25, others might occur) are the following: (1) ἕξις and διάθεσις, which are distinguished inasmuch as ἕξις expresses a lasting state, while διάθεσις is used sometimes for every state whatsoever, and sometimes for a transitory one (cf. *Metaph.* v. 19, 20; BONITZ and SCHWEGLER on this passage; TRENDELENBURG, *Hist. Beitr.* i. 95 sqq. WAITZ, *Arist. Org.* i. 303 sqq.) Instances of ἕξις are ἐπιστῆμαι and ἀρεταί; of mere διάθεσις, health and sickness. (2) Ὅσα

under the same heads.[1] He treats as the peculiar mark of *Qualitas*, the opposition of the like and the unlike.[2] But in dividing off this category from others Aristotle finds himself in difficulties.[3] To the category of *Relativity*[4] belongs that of which the peculiar essence consists in a definite relation to something else;[5] and in this sense Relativity is the category which 'expresses

κατὰ δύναμιν φυσικὴν ἢ ἀδυναμίαν λέγεται (a class which, however, cannot be strictly distinguished from the ἕξεις and διαθέσεις; see TRENDELENBURG, *ibid.* 98 sqq. More about the δύναμις later). (3) The passive qualities, παθητικαὶ ποιότητες, also called πάθος in the meaning of ποιότης καθ' ἣν ἀλλοιοῦσθαι ἐνδέχεται (*Metaph.* v. 21), and distinguished from the πάθη (which fall under the category of πάσχειν), by their duration. Aristotle, however, understands by them not only the qualities which are produced by a πάθος (such as white and black colour) but also those which produce a πάθος or an ἀλλοίωσις on our senses: cf. *De An.* ii. 5 *init.* (4) Figure (σχῆμα καὶ μορφή).

[1] For the first two and a part of the third express 'activities and movements'; the rest, 'essential properties.'

[2] *Cat.* c. 8, 11, a, 15; on the other hand (*ibid.* 10, b, 12, 26), the ἐναντιότης and the μᾶλλον καὶ ἧττον ( = 'difference of degree') do not belong to all quantities. The notion of Similarity, cf. *Top.* i. 17; *Metaph.* v. 9, 1018, a, 15, x. 3, 1054, a, 3, and *infra*, p. 287, n. 2.

[3] For, on the one hand, the remark in *Cat.* c. 8, 10, a, 16, that the concepts of rarity and denseness, roughness and smoothness, designate no *quality*, but a *situation of the bodily parts* (*i.e.* a κεῖσθαι), would (as TRENDELENBURG rightly perceives, *Hist. Beitr.* i. 101 sq.) equally apply to many other things which Aristotle includes under Quality; whilst, on the other hand, the impossibility of a constant definition of the categories is seen from the fact that a generic concept (*e.g.* ἐπιστήμη) may belong to the πρός τι, when a corresponding specific concept (γραμματική) belongs to the ποιὸν (*Cat.* c. 8, 11, a, 20; *Top.* iv. 124, b, 18; whereas in *Metaph.* v. 15, 1021, b, 3, ἰατρικὴ is counted under πρός τι, that it may follow its generic concept, ἐπιστήμη).

[4] That the category of Relativity, in *Cat.* c. 7, precedes that of Quality (*vide supra*) is contrary to the natural relation of both, as is clear, not only in all other enumerations and in the express explanation in *Metaph.* xiv. 1, 1088, a, 22, but indirectly also (in *Cat.* c. 7 itself) from the fact that the ὅμοιον and ἴσον (qualitative and quantitative equality) is in 6, b, 21 counted as πρός τι; cf. *Top.* i. 17; TRENDELENBURG, *ibid.* p. 117.

[5] Thus *Cat.* c. 7, 8, a, 31: ἔστι τὰ πρός τι οἷς τὸ εἶναι ταὐτόν ἐστι τῷ πρός τί πως ἔχειν: where the earlier verbal explanations are expressly declared (at the

the least reality.'[1] Aristotle distinguishes three kinds of Relativity,[2] which are again reduced to two.[3] In this, however, he is not consistent throughout,[4] nor has he been able to find any sure marks of this category,[5] or to avoid confusing it in many ways with others.[6]

beginning of the chapter) to be insufficient. Cf. *Top.* vi. 4, 142, a, 26, c. 8, 146, b, 3.

[1] *Metaph. ut supra*: τὸ δὲ πρός τι πάντων [for which ALEX. read πασῶν] ἥκιστα φύσις τις ἢ οὐσία τῶν κατηγοριῶν ἐστι, καὶ ὑστέρα τοῦ ποιοῦ καὶ ποσοῦ, &c.; b, 2: τὸ δὲ πρός τι οὔτε δυνάμει οὐσία οὔτε ἐνεργείᾳ. *Eth. N.* i. 4; 1096, a, 21: παραφυάδι γὰρ τοῦτ' ἔοικε καὶ συμβεβηκότι τοῦ ὄντος.

[2] *Metaph.* v. 15: the πρός τι appears in the following forms: (1) καθ' ἀριθμὸν καὶ ἀριθμοῦ πάθη (and in other related forms); to this head belong the ἴσον, ὅμοιον, ταὐτὸν in so far as these are concerned with relations to a given unity: ταὐτὰ μὲν γὰρ ὧν μία ἡ οὐσία, ὅμοια δ' ὧν ἡ ποιότης μία, ἴσα δὲ ὧν τὸ ποσὸν ἕν (the latter also in *Gen. et Corr.* ii. 6, 333, a, 29); (2) κατὰ δύναμιν ποιητικὴν καὶ παθητικήν, like the θερμαντικὸν and the θερμαντόν; (3) in the sense which comprises such expressions as μετρητὸν, ἐπιστητὸν, διανοητόν. The first two kinds come also in *Phys.* iii. 1, 200, b, 28.

[3] *Metaph. ibid.* 1021, a, 26: In the first two of the cases adduced the πρός τι is called τῷ ὅπερ ἐστὶν ἄλλου λέγεσθαι αὐτὸ ὃ ἐστὶν (double is ἡμίσεος διπλάσιον, that which warms θερμαντοῦ θερμαντικόν). In the third case it is τῷ ἄλλο πρὸς αὐτὸ λέγεσθαι (what can be measured or thought has its proper essence independently from the fact that it is measured or thought, and only becomes a relative in so far as that which measures and thinks enters into relation with it). The like also in *Metaph.* x. 6, 1056, b, 34, 1057, a, 7.

[4] Another division is found in *Top.* vi. 4, 125, a, 33 sqq.

[5] The various peculiarities of the Relative which are mentioned in *Cat.* c. 7 are all found, as is there remarked, only in a part of that class: *e.g.* the ἐναντιότης (6, b, 15, cf. *Metaph.* x. 6, 1056, b, 35, c. 7, 1057, a, 37, and also TRENDELENBURG, 123 sqq.), the μᾶλλον καὶ ἧττον, the property of correlatives to be simultaneous (*Cat.* 7, b, 15), which is not found in the relative of the second class (the ἐπιστητὸν, &c., see note 3, *supra*). But it is a universal mark of every relative, to have a corresponding correlative (τὸ πρὸς ἀντιστρέφοντα λέγεσθαι, *Cat.* 6, b, 27 sqq.), which, in the main, tallies with the statement made at first (c. 7 *init.*) and afterwards repeated (8, a, 33), that the πρός τι is ὅσα αὐτὰ ἅπερ ἐστὶν ἑτέρων εἶναι λέγεται ἢ ὁπωσοῦν ἄλλως πρὸς ἕτερον, the latter statement differing merely by being less exact. Individual substances (πρῶται οὐσίαι) cannot be relative; but generic concepts (δεύτεραι οὐσίαι) may be. *Cat.* 8, a, 13 sqq.

[6] Thus in *Cat.* c. 7, 6, b, 2, the ἕξις, διάθεσις, αἴσθησις, ἐπι-

The remaining categories are dealt with so briefly in the treatise on the *Categories*—and, indeed, wherever Aristotle mentions them—that an extended account of them cannot be given here.[1]

The essential meaning of the theory of the categories lies in the fact that it indicates to us how to distinguish the different meanings of concepts and the different corresponding relations of the actual. Thus, in the first place, the original and unchangeable essence or substance of each thing is distinguished from all that is derivative.[2] Among things which are derivative, a division is again made between the qualities, the activities, and the external circumstances. Of the qualities, one class belong to things in themselves, and in this case they express sometimes a quantitative and sometimes a qualitative determination—that is to say, they have relation either to the substratum or to the form;[3]

στήμη, θέσις are referred to πρός τι, of which, however, the first four belong also to Quality, the last to Position; ποιεῖν and πάσχειν, according to *Metaph.* v. 15, 1020, b, 28, 1021, a, 21, are relative concepts; the parts of a whole (πηδάλιον, κεφαλή, &c.) are also said to be relative (*Cat.* c. 7, 6, b, 36 sqq., cf., however, 8, a, 24 sqq.). Also Matter (*Phys.* ii. 2, 194, b, 8); and if so, why not Form as well?

[1] In the abrupt ending of the genuine *Categories*, c. 9 (as to which, see the latter part of n. 1 to p. 64, *supra*) it is merely said of the category of ποιεῖν and πάσχειν, that it is susceptible of opposition and of More and Less. As to the other categories, there is nothing but a reference to what has gone before. *Gen. et Corr.* i. 7, treats Action and Passion more at length, but that passage deals with the physical meaning of these terms, and we shall have to mention it later on. Ἕξις is discussed etymologically in *Metaph.* v. 15, and in *Cat.* c. 15 (in the *Postprædicamenta*).

[2] Cf. note 4 on next page.

[3] As TRENDELENBURG, p. 103, rightly remarks, the Quale is related to the Form, the Quantum to the Matter; *vide supra*, 284, n. 1 and 4, p. 285, n. 2, cf. p. 219, n. 2. Thus similarity also, which, according to Aristotle, consists in qualitative equality (see p. 286, n. 3, 287, n. 2), is defined, in another place, as equality of Form (*Metaph.* x. 3, 1054, b, 3: ὅμοια δὲ ἐὰν μὴ ταὐτὰ

another class belong to things only in relation to other things—that is to say, they are relative.[1] With regard to activities, the most far-reaching opposition is that of Action and Passion; on the other hand, the categories of Possession and Situation, as has been already remarked,[2] have only a precarious rank, and are afterwards dropped by Aristotle himself *sub silentio*. Finally, as regards external circumstances, these are taken on the one hand in terms of Space, and on the other in terms of Time, in the categories of the Where and the When. In strictness, however, both of these ought to have been ranged under the Category of Relation; and perhaps it was this kinship which led Aristotle to place them as a rule next in order after that category.[3] All the categories, however, lead back to Substance as their base.[4]

ἁπλῶς ὄντα . . . . κατὰ τὸ εἶδος ταὐτὰ ᾖ), in *Metaph.* iv. 5, 1010, a, 23 sqq. ποσὸν and ποιὸν are transposed with ποσὸν and εἶδος, and in *Metaph.* xi. 6, 1063, a, 27, ποιὸν is taken as φύσις ὡρισμένη, ποσὸν (like Matter, *vide infra*) as ἀόριστος.

[1] All concepts of relation refer to something which is conditioned; substances are not πρός τι: *vide supra.*

[2] *Vide supra*, p. 282.

[3] That this is not without exception is clear from p. 282, n. 3.

[4] *Anal. Post.* i. 22, 83, b, 11: πάντα γὰρ ταῦτα [ποιὸν, &c.] συμβέβηκε καὶ κατὰ τῶν οὐσιῶν κατηγορεῖται (about συμβεβηκὸς in this meaning see p. 275 sqq.). Similarly l. 19, *ibid.* a, 25, c. 4, 73, b, 5. *Phys.* i. 1, 185, a, 31: οὐθὲν γὰρ τῶν ἄλλων χωριστόν ἐστι παρὰ τὴν οὐσίαν· πάντα γὰρ καθ' ὑποκειμένου τῆς οὐσίας λέγεται (but what is asserted καθ' ὑποκειμένου is a συμβεβηκὸς in the further sense: *Anal. Post.* i. 4, 73, b, 8; *Metaph.* v. 30 *fin.* &c); c. 7, 190, a, 34: καὶ γὰρ ποσὸν καὶ ποιὸν καὶ πρὸς ἕτερον καὶ ποτὲ καὶ ποῦ γίνεται ὑποκειμένου τινὸς διὰ τὸ μόνην τὴν οὐσίαν μηθενὸς κατ' ἄλλου λέγεσθαι ὑποκειμένου τὰ δ' ἄλλα πάντα κατὰ τῆς οὐσίας; iii. 4, 203, b, 32. *Metaph.* vii. 1, 1028, a, 13, *ibid.* l. 32: πάντων ἡ οὐσία πρῶτον καὶ λόγῳ καὶ γνώσει καὶ χρόνῳ (cf. the whole chapter); c. 4, 1029, b, 23, c. 13, 1038, b, 27, ix. 1 *init.* xi. 1, 1059, a, 29, xiv. 1, 1088, b, 4: ὕστερον γὰρ [τῆς οὐσίας] πᾶσαι αἱ κατηγορίαι. *Gen. et Corr.* i. 3, 317, b, 8. Hence in all the enumerations οὐσία goes first. Cf. also *infra*, ch. vii. *init.*

An inquiry, therefore, into Substance, or Being as such, must be the starting-point in the investigation of the Actual.

2. *The First Philosophy as the Science of Being.*

As Science in general has for its task the investigation of the grounds of things,[1] so the highest Science must be that which refers to the last and most universal of the grounds of things. For this gives us the most comprehensive knowledge, everything else being comprehended under the most universal. It gives us the knowledge which is most difficult to attain, as the most universal principles are the furthest removed from sense experience. It gives us the surest knowledge, since it has to do with the most simple concepts and principles. It gives us the most instructive knowledge, because it points out the highest grounds, and all instruction is a setting forth of the grounds of things. It gives us that knowledge which is most truly an end to itself, in that it is concerned with the highest object of knowledge. It gives us that which dominates all other knowledge, for it establishes that end to which all knowledge serves.[2] But any knowledge which is to

[1] *Vide supra*, p. 163 sqq. For this we may especially cite *Metaph.* i. 1, where, with reference to prevailing views as to wisdom, it is shown (981, b, 30) that ὁ μὲν ἔμπειρος τῶν ὁποιανοῦν ἐχόντων αἴσθησιν εἶναι δοκεῖ σοφώτερος, ὁ δὲ τεχνίτης τῶν ἐμπείρων, χειροτέχνου δὲ ἀρχιτέκτων, αἱ δὲ θεωρητικαὶ τῶν ποιητικῶν μᾶλλον. Hence: ὅτι μὲν οὖν ἡ σοφία περί τινας αἰτίας καὶ ἀρχάς ἐστιν ἐπιστήμη, δῆλον.

[2] *Metaph.* i. 2, where the above is thus summed up (982, b, 7): ἐξ ἁπάντων οὖν τῶν εἰρημένων ἐπὶ τὴν αὐτὴν ἐπιστήμην πίπτει τὸ ζητούμενον ὄνομα [σοφία]· δεῖ γὰρ ταύτην τῶν πρώτων ἀρχῶν καὶ αἰτιῶν εἶναι θεωρητικήν. Cf. iii. 2, 996, b, 8 sqq. *Eth. N.* vi. 7. *Metaph.* vi. 1, 1026, a, 21: τὴν τιμιωτάτην [ἐπιστήμην] δεῖ περὶ τὸ τιμιώτατον γένος εἶναι. αἱ μὲν οὖν θεωρητικαὶ τῶν ἄλλων ἐπιστημῶν αἱρετώτεραι, αὕτη δὲ τῶν θεωρητικῶν.

set forth the ultimate grounds of things must clearly include all actuality, for these ultimate grounds are simply those which explain Being as such.[1] Other sciences, such as Physics and Mathematics, may limit themselves to a particular sphere, the conception of which they take no further. The science of the ultimate grounds of things must go through the whole world of things, and must take them back, not to finite principles, but to their eternal causes, and, in the last resort, to that which is unmoved and incorporeal, from which proceeds all movement and formation in the corporeal world.[2] This science is the First Philosophy, which

[1] *Metaph.* iv. 1: ἔστιν ἐπιστήμη τις ἣ θεωρεῖ τὸ ὂν ᾗ ὂν καὶ τὰ τούτῳ ὑπάρχοντα καθ' αὑτό. αὕτη δ' ἐστὶν οὐδεμιᾷ τῶν ἐν μέρει λεγομένων ἡ αὐτή· οὐδεμία γὰρ τῶν ἄλλων ἐπισκοπεῖ καθόλου περὶ τοῦ ὄντος ᾗ ὄν, ἀλλὰ μέρος αὐτοῦ τι ἀποτεμόμεναι περὶ τούτου θεωροῦσι τὸ συμβεβηκός . . . ἐπεὶ δὲ τὰς ἀρχὰς καὶ τὰς ἀκροτάτας αἰτίας ζητοῦμεν, δῆλον ὡς φύσεώς τινος αὐτὰς ἀναγκαῖον εἶναι καθ' αὑτήν. . . . διὸ καὶ ἡμῖν τοῦ ὄντος ᾗ ὂν τὰς πρώτας αἰτίας ληπτέον. Cf. note 2 and *supra*, ch. iv. *passim.*

[2] See the previous note, and see also *Metaph.* vi. 1: αἱ ἀρχαὶ καὶ τὰ αἴτια ζητεῖται τῶν ὄντων, δῆλον δὲ ὅτι ᾗ ὄντα. Every science has to do with certain principles and causes. ἀλλὰ πᾶσαι αὗται [ἰατρική, μαθηματική, &c.] περὶ ἕν τι καὶ γένος τι περιγραψάμεναι περὶ τούτου πραγματεύονται, ἀλλ' οὐχὶ περὶ ὄντος ἁπλῶς οὐδὲ ᾗ ὄν, οὐδὲ τοῦ τί ἐστιν οὐθένα λόγον ποιοῦνται· ἀλλ' ἐκ τούτου αἱ μὲν αἰσθήσει ποιήσασαι αὐτὸ δῆλον, αἱ δ' ὑπόθεσιν λαβοῦσαι τὸ τί ἐστιν οὕτω τὰ καθ' αὑτὰ ὑπάρχοντα τῷ γένει περὶ ὅ εἰσιν ἀποδεικνύουσιν ἢ ἀναγκαιότερον ἢ μαλακώτερον. . . . ὁμοίως δὲ οὐδ' εἰ ἔστιν ἢ μὴ ἔστι τὸ γένος περὶ ὃ πραγματεύονται οὐδὲν λέγουσι διὰ τὸ τῆς αὐτῆς εἶναι διανοίας τό τε τί ἐστι δῆλον ποιεῖν καὶ εἰ ἔστιν. So it is with Physics and Mathematics, the former being concerned with that which is moved and in which the Form is not separated from the Matter, the latter being at the best concerned with that which is abstracted from Matter and Movement, but which does not exist of itself as immaterial and unmoved (cf. p. 183, n. 3): εἰ δέ τί ἐστιν ἀΐδιον καὶ ἀκίνητον καὶ χωριστόν, φανερὸν ὅτι θεωρητικῆς τὸ γνῶναι. οὐ μέντοι φυσικῆς γε . . . οὐδὲ μαθηματικῆς, ἀλλὰ προτέρας ἀμφοῖν. The object of this science is the χωριστὰ καὶ ἀκίνητα· ἀνάγκη δὲ πάντα μὲν τὰ αἴτια ἀΐδια εἶναι, μάλιστα δὲ ταῦτα· ταῦτα γὰρ αἴτια τοῖς φανεροῖς τῶν θείων. In them, if anywhere, τὸ θεῖον must be sought; with them stands or falls the possibility of

Aristotle also names Theology,[1] and its task is to investigate all actuality and the ultimate grounds thereof, which, as being ultimate, are necessarily also the most universal, and concern, not any part of the actual, but the whole.

It is true that the possibility of such a science is open to much question. How can one and the same science treat of causes which are of different kinds, and which do not act collectively together? And, on the other hand, if we were to refer the causes of each *genus* to a special science, how could any one of these sciences claim to be that which is described above—since in this case the qualities claimed for it would rather be divided up among the special sciences?[2] Again, it is a question whether the First Philosophy is to draw into its scope the principles of scientific procedure, or whether these belong at all to any definite science, inasmuch as all sciences make use of them and it is impossible to assign any definite object to which they relate.[3] Or, again, is it to be a single science, or more than one, which will deal with all classes of the actual? If there are more than one, the next question is, whether they are all of the same kind or no, and which of them is the First Philosophy. If there be only one, then it would seem that that one must include all

a First Philosophy: if there is nothing else besides natural substances, Physics is the first science; *εἰ δ' ἐστί τις οὐσία ἀκ'νητος, αὕτη προτέρα καὶ φιλοσοφία πρώτη καὶ καθόλου οὕτως ὅτι πρώτη· καὶ περὶ τοῦ ὄντος η ὃν ταύτης ἂν εἴη θεωρῆσαι καὶ τί ἐστι καὶ τὰ ὑπάρχοντα ᾗ ὄν.*

[1] *Metaph. loc. cit. et alib.*; *vid. supra.*

[2] *Metaph.* iii. 1, 995, b, 4, c. 2 *init.*

[3] *Ibid.* c. 1, 995, b, 6, c. 2, 996, b, 26; cf. *supra*, ch. v. *passim.*

objects of knowledge, and thereby the multiplicity of the special sciences would disappear.[1] Finally we may ask whether this single science is to relate only to substances or to their qualities also. The first alternative seems inadmissible, because it would be then impossible to say what kind of science had to do with the qualities of Being. The latter seems untenable, because substances cannot be known by the same method of demonstration as qualities.[2]

Aristotle answers these questions by remarking that not only that which falls under the same conception, but also that which relates to the same object, belongs to one and the same science.[3] This, he says, is the case as regards Being. Only that which is itself Substance, or is somehow related to substance, can be named Being. All those conceptions which are in question denote either that which is Substantial, or else qualities, activities and circumstances of Substance, and in the end they all lead up to certain elementary pairs of opposites, and opposites fall under the same science.[4] For these reasons he concludes that it is one and the same science which has to deal with all Being as such.[5] The difficulty

[1] *Metaph. ibid.* 995, b, 10, c. 2, 997, a, 15.

[2] C. 1, 995, b, 18, c. 2, 997, a, 25. Among the *συμβεβηκότα ταῖς οὐσίαις* must be counted also the concepts of *ταὐτὸν, ἕτερον, ὅμοιον, ἐναντίον*, &c. enumerated in 995, b, 20; cf. iv. 2, 1003, b, 34 sqq. 1004, a, 16 sqq. The further Apories of the third book, which are concerned not only with the concept of the First Philosophy but also with its contents, will be mentioned later on.

[3] *Metaph.* iv. 2, 1003, b, 12: *οὐ γὰρ μόνον τῶν καθ' ἓν λεγομένων ἐπιστήμης ἐστὶ θεωρῆσαι μιᾶς, ἀλλὰ καὶ τῶν πρὸς μίαν λεγομένων φύσιν. Ibid.* l. 19, 1004, a, 24, cf. note 4; and as to the difference between *καθ' ἓν* and *πρὸς ἕν*, see *Metaph.* vii. 4, 1040, a, 34 sqq.

[4] On this point see p. 224, *supra*.

[5] *Metaph.* iv. 2: *τὸ δὲ ὂν λέγεται μὲν πολλαχῶς, ἀλλὰ πρὸς ἓν καὶ μίαν τινὰ φύσιν* (for which later: *ἅπαν πρὸς μίαν ἀρχὴν*) *καὶ*

that this science must needs resume in itself the content of all other sciences, is removed in Aristotle's mind by the distinction he draws between the different senses of Being. As Philosophy in general has to do with Essential Being, so there will be as many sections of Philosophy as there are kinds of Essential Being.[1] As Being determinate is distinguished from Being in general, so is the First Philosophy as the universal science distinguished from the special sciences. It deals with the particular also, not in its particularity, but as a form of Being. It abstracts from the peculiarities whereby a particular thing distinguishes itself from others, in order to have regard to that only in it which appertains to all Being.[2] The objection that Substance itself must needs be treated in other ways than that

*οὐχ ὁμωνύμως . . . . τὰ μὲν γὰρ ὅτι οὐσίαι ὄντα λέγεται, τὰ δ' ὅτι πάθη οὐσίας, τὰ δ' ὅτι ὁδὸς εἰς οὐσίαν, ἢ φθοραὶ ἢ στερήσεις ἢ ποιότητες ἢ ποιητικὰ ἢ γεννητικὰ οὐσίας, ἢ τῶν πρὸς τὴν οὐσίαν λεγομένων, ἢ τούτων τινὸς ἀποφάσεις ἢ οὐσίας· διὸ καὶ τὸ μὴ ὂν εἶναι μὴ ὄν φαμέν.* The consideration of One also belongs to this science, for the *ἓν* and the *ὂν* are (*ibid.* 1003, b, 22) *ταὐτὸν καὶ μία φύσις τῷ ἀκολουθεῖν, ὥσπερ ἀρχὴ καὶ αἴτιον, ἀλλ' οὐχ ὡς ἑνὶ λόγῳ δηλούμενα . . . δῆλον οὖν ὅτι καὶ τὰ ὄντα μιᾶς θεωρῆσαι ᾗ ὄντα. πανταχοῦ δὲ κυρίως τοῦ πρώτου ἡ ἐπιστήμη καὶ ἐξ οὗ τὰ ἄλλα ἤρτηται καὶ δι' ὃ λέγονται. εἰ οὖν τοῦτ' ἐστὶν ἡ οὐσία, τῶν οὐσιῶν ἂν δέοι τὰς ἀρχὰς καὶ τὰς αἰτίας ἔχειν τὸν φιλόσοφον. . . . διὸ καὶ τοῦ ὄντος ὅσα εἴδη θεωρῆσαι μιᾶς ἐστιν ἐπιστήμης τῷ γένει τά τε εἴδη τῶν εἰδῶν.* Further, 1004, a, 9 sqq. 25, b, 27 sqq.

[1] *Metaph.* iv. 2, 1004, a, 2, &c.

[2] *Metaph.* iv. 2, 1004, a, 9 sqq. Since the concepts of the One and the Many, of Identity and Distinction, &c., relate to one and the same object, therefore one and the same science must deal with them; 1004, b, 5: *ἐπεὶ οὖν τοῦ ἑνὸς ᾗ ἓν καὶ τοῦ ὄντος ᾗ ὂν ταῦτα καθ' αὑτά ἐστι πάθη, ἀλλ' οὐχ ᾗ ἀριθμοὶ ἢ γραμμαὶ ἢ πῦρ. δῆλον ὡς ἐκείνης τῆς ἐπιστήμης καὶ τί ἐστι γνωρίσαι καὶ τὰ συμβεβηκότ' αὐτοῖς.* As the mathematical and physical properties of things form a special province, *οὕτω καὶ τῷ ὄντι ᾗ ὂν ἔστι τινὰ ἴδια, καὶ ταῦτ' ἐστι περὶ ὧν τοῦ φιλοσόφου ἐπισκέψασθαι τἀληθές.* *Ibid.* 1005, a, 8. This is further illustrated in xi. 3, 1061, a, 28 sqq.

which proceeds by deducing its essential attributes would not trouble Aristotle,[1] since the same thing would be true of the fundamental conceptions of any science whatever. To the question whether the First Philosophy would also deal with the general principles of scientific procedure, Aristotle answers in the affirmative, inasmuch as these principles themselves relate to Being in general rather than to any particular class of Being. In fact, he proceeds immediately to a detailed investigation of the law of Contradiction and the Excluded Middle, which by reason of its relation to Methodology has been already discussed at p. 251. By Aristotle, however, these inquiries are in the present connection treated ontologically, as giving knowledge of the actual, for which reason he includes them in his First Philosophy.[2]

### 3. *The Fundamental Questions of Metaphysics and their Treatment by earlier Philosophers.*

The forerunners of Aristotle had left him a series of problems in the way of metaphysical inquiry for which he found it necessary to obtain a new solution. The most important of these, to the answering of which the fundamental ideas of his system are immediately directed, were the following :

1. First of all, how are we to think of the actual? Is there nothing but corporeal existence, as the pre-Socratic natural philosophy assumed? Or is there, beside and above that, something uncorporeal, as

[1] It is nowhere expressly answered in the *Metaphysics*.
[2] *Metaph*. iv. 3.

Anaxagoras, the Megarians and Plato said? Are the ultimate grounds of things of the nature of matter only, or is form to be distinguished from matter as a peculiar and a higher principle?

2. Connected with this is the question of the relation of the Individual to the Universal. What is that which is essential and in the last resort actual? Is it the individual things or the universal ideas, or is there perhaps in truth only one universal Being? The first was the common view which had lately come out, bluntly enough, in the Nominalism of Antisthenes; the second was the theory of Plato; the third that of Parmenides and of Eucleides after him.

3. Seeing that unity of being and manifold existence are both given in experience, how can we hold these two together in thought? Can the One be at the same time a manifold, including in itself a number of parts and qualities? Can the Many come together in an actual unity? These questions also were variously answered. Parmenides and Zeno had denied that the two ideas could be reconciled, and had therefore declared the manifold to be a delusion, while the Sophists used the assumption of the manifold for their theory of argument, as Antisthenes for his theory of knowledge.[1] The Physicists of the Atomic and Empedoclean schools limited the relation between the Many and the One to that of an external and mechanical juxtaposition of parts. The Pythagoreans found in number, and Plato, with keener philosophic insight, in his Ideas, a means of combining a multitude of different

[1] See ZELLER, *Ph. d. Gr.* pt. 1, pp. 985 etc.

determinations of being in an inner unity, while the corresponding relation in sensible things explained itself, according to Plato, by impact.

4. Equally different were the views held as to the passing of the one into another—that is, as to the theory of Change and Becoming. How can being become not-being, or not-being being? How can anything come to be or cease to be? How is movement possible, or change? Such were the questions that Parmenides and Zeno had asked in doubt, and the Megarians and the Sophists had repeated their questionings. The like difficulties drove Empedocles and Anaxagoras, Leucippus and Democritus to explain the coming to be and ceasing to be of all things by the combinations and separations of unchangeable matter. Plato himself so far agreed with them that he confined change to the sphere of appearances, and excepted from it all that was truly actual.

Aristotle has all these questions clearly in view. To the first two problems related most[1] of the ἀπορίαι with which he opens his great work on Metaphysics, after the introductory discussions of the first book. Are sensible things the only essential being, or is there besides them some other? Is the 'other' of one kind, or is it manifold like the Ideas and mathematical entities of Plato?[2] The limitation of Being to sensible things is contradicted by the series of arguments on which Plato had already based his Ideal Theory: such as, that the

[1] With the exception of those just mentioned, which are concerned with the office of the First Philosophy in general.

[2] *Metaph.* iii. 2, 997, a, 34 sqq. (xi. 1, 1059, a, 38, c. 2, 1060, b, 23), iii. 6, viii. 2.

particular things of sense, passing and indistinct as they are, can be no object of knowledge;[1] and that all the world of sense, as passing, presupposes an eternal—as moved, presupposes an unmoved—as formed, presupposes a forming cause.[2] These Platonic assumptions, however, as we presently find, are beset by all manner of difficulties. The problem returns in the form of the question[3] whether the ultimate grounds of things are to be sought for in their genera, or in their constituent parts—the latter being the basis of their material conditions, the other the basis of their formal determinations.[4] For either view plausible arguments may be adduced. On the one hand there is the analogy of corporeal things, whose constituent parts we name when we have to explain their character. On the other hand there are the conditions of knowledge, which we attain to by a process of determination through concepts in the assignment of genera and species. And as between these again there arises immediately the question, whether the highest genera or the lowest species ought to be treated as the true *principia*. The former would be universal, including all individual existence as an *ultimate* principle should do. The latter would be determinate conceptions, and out of such only could the individual in its peculiarity of character be obtained.[5]

[1] *Metaph.* vii. 15, 1039, b, 27; iv. 5, 1009, a, 36, 1010, a, 3, cf. i. 6, 987, a, 34; xiii. 9, 1086, a, 37, b, 8.

[2] *Ibid.* iii. 4, 999, b, 3 sqq.

[3] *Metaph.* iii. 3: πότερον δεῖ τὰ γένη στοιχεῖα καὶ ἀρχὰς ὑπολαμβάνειν ἢ μᾶλλον ἐξ ὧν ἐνυπαρχόντων ἐστὶν ἕκαστον πρῶτον (xi. 1, 1059, b, 21).

[4] *Vide supra*, ch. v.

[5] *Metaph.* iii. 998, b, 14 sqq. (xi. 1, 1059, b, 34). Among the varied and often intricate forms of Aristotle's dialectic, it is only possible to state here the leading line of reasoning.

On the like considerations rests the other difficulty, to which Aristotle rightly gives special prominence[1]—the question whether it is only individual things that are actual, or whether the universal of the genera be actual also.[2] The former theory seems untenable because the sphere of individual existences is unlimited and of that which is unlimited no knowledge is possible, and since all knowledge in any case is of universals. The latter is open to all the objections which lie against the theory of a universal existing independently, or the Ideal Theory of Plato.[3] An application of this question to a particular case is contained in the further inquiry, whether the conceptions of the One and of Being denote anything substantial or are only predicates for some subject of a different nature. Those who accept universals at all (*e.g.* Number) as in any way substantial, must affirm the first proposition; but the opposite opinion is not only supported by the analogy of the whole world of concrete things, but also by the argument that you cannot treat the One as substance without denying, as did Parmenides, the existence of

[1] *Metaph.* iii. 4 *init.* c. 6 *fin.* (cf. vii. 13 sq.), xiii. 6, xi. 2 *init.*, *ibid.* 1060, b, 19. In the first passage this Apory is called the πασῶν χαλεπωτάτη καὶ ἀναγκαιοτάτη θεωρῆσαι; similarly in xiii. 10, 1086, a, 10; and we shall find later on, that its importance and difficulty rest not merely on the opposition of Aristotle to Plato, but also on the intrinsic contradiction involved in the foundations of his own system.

[2] That this Apory coincides with that adduced on p. 298, Aristotle himself asserts in *Metaph.* iii. 4, 999, b, 1: εἰ μὲν οὖν μηθέν ἐστι παρὰ τὰ καθ' ἕκαστα, οὐθὲν ἂν εἴη νοητὸν ἀλλὰ πάντα αἰσθητὰ, and hence he here again adduces the reasons, which were there mentioned.

[3] *Metaph.* iii. 4, c. 6, 1003, a, 5, cf. p. 161, 4. Only another expression for the above is the question (iii. 4, 999, b, 24, xi. 2 *fin.*), whether the ἀρχαὶ are εἴδει ἓν or ἀριθμῷ ἕν: τὸ γὰρ ἀριθμῷ ἓν ἢ τὸ καθέκαστον λέγειν διαφέρει οὐθὲν (999, b, 33 cf. c. 6, 1002, b, 30).

the Many, as such.[1] To the same head belongs the question whether Numbers and Figures are Substances or no, and to this also opposite answers are possible. For as the qualities of bodies are mere predicates from which we distinguish the bodies themselves as their substrata, and as these bodies presuppose, as their elements, the surface, the line, the point, and unity, it would seem that surface and unity must be as substantial as body is; while on the other hand these have not any existence for themselves but only in corporeal things, and they do not come to be and cease to be, as Substances do.[2] Yet another difficulty which leads back to the relation of the individual to the Universal is this. The *principia* must on the one hand, as it seems, be of a potential character, since possibility precedes actuality: on the other hand, they must be actual, since otherwise Being would be merely accidental.[3] Individual things, indeed, do actually exist: whereas the universal concept, except in so far as it has found for itself a place in individual entities, exists only potentially. And finally, if there be besides the corporeal, an uncorporeal, and beside the changing, an eternal, the final question must be whether both of these have the same *principia*[4] or not. If we say Yes, it seems impossible to explain the difference between them. If we say No, then we must

[1] *Metaph.* iii. 4, 1001, a, 3 sqq., and, referring to this, x. 2, xi 1, 1059, b, 27, c. 2, 1060, a, 36.

[2] *Metaph.* iii. 5 (cf. xi. 2, 1060, b, 12 sqq., and on p. 1002, b, 32: viii. 5 *init.* c. 3, 1043, b, 15). We shall meet with further objections to this view in the criticism of the Pythagorean and Platonic doctrines.

[3] *Ibid.* iii. 6, 1002, b, 32 cf. BONITZ and SCHWEGLER on this passage.

[4] As Plato supposed, in full accordance with Aristotle's view. Cf. ZELLER, *Ph. d. Gr.* pt. i. p. 628 sq. 805 sq.

decide whether the *principia* of the changeable are themselves changeable or unchangeable. If they be changing, then we must go back to deeper *principia*, with which the same dilemma will recur. If they be unchangeable, then we have to explain how it can be that out of the unchanging, in one case the changeable, in another the unchangeable, arises.[1] The like difficulty, in truth, applies to all the different classes of Being. How, for example, is it possible that things which fall under wholly different categories, such as those of Substance and Relation, can lead back to principles that are one and the same?[2]

The other questions stated above—those relating to the unity of the manifold, and the possibility of change—were clearly present to Aristotle's mind, and he sought in the first principles of his Metaphysics to find a solution for them. The combination of the manifold into unity, concerns him chiefly as leading up to the inquiry how the genus and the differentia can be one in conception;[3] though he recognises that the same question may be raised in all cases where things of a different nature are combined.[4] Aristotle's answer, in all such

[1] *Metaph.* iii. 4, 1000, a, 5 sqq. (xi. 2, 1060, a, 27).

[2] *Ibid.* xii. 4. Aristotle answers (*ibid.* 1070, b, 17) that the final grounds of things are only analogically the same for all.

[3] This question also occurs in *Anal. Post.* ii. 6, 92, a, 29. In *De Interpr.* c. 5, 17, a, 13, it is proposed, discussed more fully in *Metaph.* vii. 12, again touched upon in viii. 3, 1043, b, 4 sqq., 1044, a, 5, and settled in the manner stated in the text by viii. 6.

[4] Thus with regard to numbers (*Metaph.* viii. 3, 1044, a, 2, c. 6 *init.*), and to the relation between soul and body (c. 6, 1045, b, 11; *De An.* ii. 1, 412, b, 6 sqq.); but also in many other cases: cf. *Metaph.* viii. 6, 1045, b, 12: καίτοι ὁ αὐτὸς λόγος ἐπὶ πάντων, &c.

cases, as will be seen, is in its essence one and the same. It is based upon the relation of the possible and the actual—of Matter and Form.[1] The problems of Becoming and Change are of still greater importance for the Aristotelian system. If a thing comes to be, does it arise out of being or out of not-being? If a thing ceases to be, does it become something, or nothing? Does change mean the becoming of opposite out of opposite, or of the same out of the same? The one seems to be impossible—because nothing can come out of nothing, nor can anything return to nothing, nor take on it the qualities of its opposite (*e.g.* warmth the qualities of cold). The other alternative is equally impossible, because it is absurd that anything should at a definite time come to be that which it already is.[2] A similar case is the analogous problem whether those things which act upon each other are likes or opposites.[3] In all these questions, difficulties are brought to light which are soluble only by a careful inquiry into the first principles of philosophy.

[1] Cf. *Phys.* i. 2 *fin*, where Lycophron and others are blamed for running into difficulties by the inference that one must at the same time be many: ὥσπερ οὐκ ἐνδεχόμενον ταὐτὸν ἕν τε καὶ πολλὰ εἶναι, μὴ τἀντικείμενα δέ· ἔστι γὰρ τὸ ἓν καὶ δυνάμει καὶ ἐντελεχείᾳ.

[2] Cf. *Phys.* i. 6, 189, a, 22, c. 7, 190, b, 30, c. 8 *init. ibid.* 191, b, 10 sqq., *Gen. et Corr.* i. 3 *init. ibid.* 317, b, 20 sqq. *Metaph.* xii. 1 *fin.*

[3] See *Gen. et Corr.* i. 7; *Phys.* i. 6, 189, a, 22, c. 7, 190, b, 29, c. 8 191, a, 34. To Aristotle this question coincides with the other, as to Change, since that which acts corresponds with that which suffers: ὥστ' ἀνάγκη τὸ πάσχον εἰς τὸ ποιοῦν μεταβάλλειν (*Gen. et Corr.* i. 7, 324, a, 9). Hence it is true that, on the one hand, things which are not opposed cannot act upon one another: οὐκ ἐξίστησι γὰρ ἄλληλα τῆς φύσεως ὅσα μήτ' ἐναντία μήτ' ἐξ ἐναντίων ἐστὶ (*ibid.* p. 323, b, 28); but on the other hand, neither can absolute opposites: ὑπ' ἀλλήλων γὰρ πάσχειν τἀναντία ἀδύνατον (*Phys.* i. 7, 190, b, 33).

The contributions which his forerunners had made towards their solution, did not in any way satisfy Aristotle.[1] He takes exception to most of the pre-Socratic philosophies primarily because of their materialism, which made it impossible for them to reach out to the first principles of the incorporeal;[2] and he further objects that they practically took no account of ideal and final causes.[3]

The earlier Ionic school is criticised by him because of the difficulties which beset every one of their presuppositions,[4] because of their tendency to overlook the moving cause,[5] and because of the superficial way in which they erected an arbitrarily chosen element into the universal basis of things, whereas the sensible qualities and changes of bodies are conditioned by the opposition of different elements.[6]

The same criticism holds for Heraclitus, in so far as he agrees with the Ionic school in assigning a material element as the basis.[7] To his peculiar doctrine as to the flux of all things and the meeting of opposites, Aristotle has other objections. He thinks that the doctrine of the flux is on the one hand not accurately thought out, while on the other hand it overlooks the

[1] For what follows cf. STRÜMPELL, *Gesch. d. theor. Phil. d. Gr.* 157–184; BRANDIS, ii. b, 2, p. 589 sqq. Aristotle's criticism of earlier philosophers is here dealt with only in so far as it concerns their fundamental doctrines.

[2] *Metaph.* i. 8 *init.* cf. iv. 5, 1009, a, 36, 1010, a, 1.

[3] *Metaph.* i. 7, 988, a, 34 sqq. b, 28, *Gen. et Corr.* ii. 9, 335, b, 32 sqq., *Gen. An.* v. 1, 778, b, 7.

[4] See *De Cœlo*, iii. 5, *Metaph.* i. 8, 988, b, 29 sqq.

[5] *Metaph.* i. 8, 988, b, 26; *Gen. et Corr.* ii. 9, 335, b, 24.

[6] *Gen. et Corr.* ii. 1, 329, a, 8; *De Cœlo*, iii. 5, 304, b, 11, cf. *ibid.* i. 3, 270, a, 14; *Phys.* i. 7, 190, a, 13 sqq. iii. 5, 205, a, 4.

[7] Aristotle, indeed, generally puts him along with Thales, Anaximenes, &c.; see ZELLER, *Ph. d. Gr.* pt. i. 585, 1.

fact that every change presupposes a substratum; that under alterations of matter, the form maintains itself; that it is not all kinds of change which could go on *ad infinitum*; and that from the changeableness of earthly things we ought not to draw any conclusion as to the universe as a whole.[1] The theory of the unity of opposites he dismisses by the argument that Heraclitus is in conflict with the Law of Contradiction.[2]

The objections to Empedocles cover various points of detail regarding his natural philosophy which cannot be gone into here, but they reach also to the fundamentals of his system. His assumptions as to the immutability of the original matter are held to involve the impossibility of qualitative change, of the passage of the elements into one another as seen in experience, and of their combination into unity in the derivative forms of matter, and also of the doctrines, upheld by Empedocles himself, as to the quantitative identity of the elements and their co-existence in 'the Sphere.'[3] Aristotle also objects that the derivation of these elements is not shown, and that they are not carried back to the original divisions of material being,[4] which are only incompletely presented in the definite kinds of matter known to us as fire, water, &c.[5] He remarks that the opposition of heavy and light is not explained

[1] *Metaph.* iv. 5, 1010, a, 15 sqq.; *Phys.* viii. 3, 253, b, 9 sqq.

[2] See ZELLER, *Ph. d. Gr.* i. 600 sq., and 483, 1.

[3] *Metaph.* i. 8, 989, a, 22–30; *Gen. et Corr.* ii. 1, 329, b, 1, c. 7, 334, a, 18, 26, c. 6 *init. ibid.* i. 1, 314, b, 10, 315, a, 3, c. 8, 325, b, 16. In *De Cælo*, iii. 7 *init*, he gives a detailed refutation of the atomistic reduction (by EMPEDOCLES) of ἀλλοίωσις to ἔκκρισις.

[4] The opposites 'warm and cold,' &c., on which Aristotle bases his own theory of the elements.

[5] *Gen. et Corr.* i. 8, 325, b, 19, ii. 3, 330, b, 21.

at all,[1] and that in the theory of the pores and effluxes an explanation of the mutual influence of bodies is put forward which would logically lead to absolute Atomism.[2] The two 'causes of motion' in the Empedoclean system he considers not to be properly deduced from first principles nor to be sufficiently distinguished, since Love not only unites but also divides, and Hate not only divides but also unites; [3] and he remarks that since no laws of their working are laid down, an inordinate scope is left, in the fashioning of the world, to Chance.[4] He holds the assumption of alternating states of the world to be arbitrary and untenable,[5] and the theory of the composition of the soul out of the elements to be beset with difficulties of all kinds.[6] Finally, Aristotle believes that the philosophy of Empedocles would lead in the end to a sensationalism which would make all truth uncertain.[7]

The criticisms on the Atomic theory are of a similar kind. Aristotle admits that the theory has a very plausible basis. If we start from the Eleatic presuppositions, and if we desire nevertheless to save the ideas of the manifold and of movement, then an Atomic theory is the most convenient way of escape. So if we think it an impossibility to suppose bodies to be actually divisible *ad infinitum*, the only alternative seems to lie in the assumption of indivisible atoms as their ultimate

[1] *De Cœlo*, iv. 2, 309, a, 19.

[2] *Gen. et Corr.* i. 8; cf. ZELLER, *Ph. d. Gr.* part i. 6J5, 3.

[3] See ZELLER, *Ph. d. Gr.* pt. i. 698, 2, and *Metaph.* iii. 8, 986, a, 25.

[4] *Gen. et Corr.* ii. 6, 333, b, 2 sqq. (cf. ZELLER, *ibid.* 703, 1); *Part. An.* i. 1, 640, a, 19; *Phys.* viii. 1, 252, a, 4.

[5] *Phys.* viii. 1, 251, b, 28 sqq.; *De Cœlo*, i. 10, 280, a, 11; *Metaph.* iii. 4, 1000, b, 12.

[6] *De An.* i. 5, 409, b, 23–410, b, 27; *Metaph.* iii. 4, 1000, b, 3.

[7] *Metaph.* iv. 5. 1009, b, 12; cf. ZELLER, *ibid.* 727, 1.

constituents.[1] Aristotle, however, neither admits these Eleatic presuppositions, nor does he concede that the division of bodies can ever reach its limit,[2] or that the coming of definite things into being could be treated as a combination of *minima*, or their passing out of existence as a resolution into atoms.[3] Rather does he hold that indivisible bodies are impossible, since every fixed quantity can be divided into fixed quantities, which again must be divisible.[4] He says that atoms which are neither qualitatively distinguished nor capable of acting on each other could not explain the different qualities and the interaction of bodies or the passage of the elements into one another or the processes of becoming and change.[5] The theory that the atoms are infinite in number and kind is also rejected, because the phenomena can be explained without this hypothesis, since all differences of quality or of form are reducible to certain fundamental types, and since the situation and movement of the elements in nature are also limited by number; and it is Aristotle's view that a limited number of original entities is always to be preferred to an infinity of them, because the limited is better than the limitless.[6] The assumption of empty space, so far

[1] *Gen. et Corr.* i. 8, 324, b, 35 sqq. c. 2, 316, a, 13 sqq.; cf. ZELLER, *ibid.* 764 sqq.

[2] *Gen. et Corr.* i. 2, 317, a, 1 sqq. But Aristotle expresses himself more exactly on this point, though without explicit reference to the Atomic theory, in *Phys.* iii. 6 sq.

[3] *Gen. et Corr.* i. 2, 317, a, 17 sqq.

[4] *Phys.* vi. 1; *De Cælo*, iii. 4, 303, a, 20.

[5] *Gen. et Corr.* i. 8, 325, b, 34 sqq. c. 9, 327, a, 14; *De Cælo*, iii. 4, 303, a, 24; *ibid.* c. 7, c. 8, 306, a, 22 sqq. We shall have more to say on this subject later.

[6] *De Cælo*, iii. 4, 303, a, 17 sqq. 29 sqq. b, 4; cf. *Phys.* i. 4 *fin.* viii. 6, 259, a, 8.

from being necessary[1] to explain phenomena such as those of movement, would rather be inconsistent with the characteristic movement of bodies and the differences of weight, for in a vacuum nothing could have any particular place towards which it would tend, and everything would necessarily move with equal quickness.[2] He finds that movement and its different kinds are, in the Atomic Philosophy, simply presupposed, and not deduced from first principles.[3] He objects that the school completely overlooks the teleology of nature, and that instead of giving us any principles on which phenomena rest, it refers us to an unsolved necessity, or to the assertion that in fact things have always been as they are.[4] There are further polemical passages, which can only here be mentioned in passing: against the theory of an infinite number of co-existent worlds;[5] against Democritus' explanation of sense-perception;[6] against his doctrine concerning the soul,[7] and his acceptance of sensory appearance as truth.[8]

The natural philosophy of Anaxagoras is so closely connected with the physics of the Atomists and Empe-

[1] *Phys.* iv. 7-9, cf. c. 6. More on this later.

[2] *Phys.* iv. 8, 214, b, 28 sqq.; *De Cælo*, i. 7, 275, b, 29, 277, a, 33 sqq. ii. 13, 294, b. 30, iii. 2, 300, b, 8. With regard to the theory of Weight held by Democritus, see further *De Cælo*, iv. 2, 6; as to the influence of Aristotle's attack upon the changes which Epicurus made in the atomic theory, see ZELLER, *Ph. d. Gr.* pt. iii. a, 378.

[3] *Metaph.* xii. 6, 1071, b, 31.

[4] See ZELLER, *Ph. d. Gr.* pt. i. 788 sqq., and *Gen. An.* v. 8 *vers. fin.*, where Aristotle's criticism of the mechanical explanation of nature by Democritus, is very similar to Plato's criticism in the *Phædo* of that proposed by Anaxagoras.

[5] *De Cælo*, i. 8; see ZELLER, *ibid.* 797, 2.

[6] *De Sensu*, c. 4, 442, a, 29.

[7] *De An.* i. 3, 406, b, 15, cf. c. 2, 403, b. 29, 405, a, 8.

[8] ZELLER, *ibid.* 822.

docles that it is open for the most part to the same objections. The infinite number of his primary bodies is not only needless, inasmuch as a small number would do equally well, but it is also mistaken inasmuch as it would make all knowledge of things impossible. Again, since the primary differences of kinds of matter are limited in number, so must be the primary bodies also. Since all bodies have a natural magnitude, their constituent parts (the so-called ὁμοιομερῆ) cannot be of indefinite size; and since all bodies are limited, there cannot be in each thing, as Anaxagoras was logically obliged to hold, constituents belonging to the infinitely various kinds of matter.[1] Further, if primary matter is to be looked for in the simplest bodies, few of the ὁμοιομερῆ could be considered as primary matter.[2] Anaxagoras recognises the existence of change in things, but the doctrine of the unchangeability of their constituent parts is inconsistent with that admission. The continuity of bodies is negated by the infinite number of their constituents,[3] in spite of Anaxagoras's weak attack upon the theory of empty space.[4] Aristotle finds that Anaxagoras is as little able to account for differences of weight as was Empedocles.[5] The original mingling of all kinds of matter, as Anaxagoras states it, would be unthinkable;[6]

[1] *Phys.* i. 4, 187, b, 7 sqq; *De Cœlo*, iii. 4. For a further remark as to the infinite in space, see *Phys.* iii. 5, 205, b, 1.

[2] *De Cœlo*, iii. 4, 302, b, 14.

[3] *Gen. et Corr.* i. 1; *Phys.* iii. 4, 203, a, 19. Further objections of a similar kind, but not especially directed against Anaxagoras, will be dealt with in the latter part of ch. viii. *infra*.

[4] *Phys.* iv. 6, 213, a, 22.

[5] *De Cœlo*, iv. 2, 309, a, 19.

[6] Besides the physical objections which are raised against it in *Metaph.* i. 8, *Gen. et Corr.* i. 10, 327, b, 19, Aristotle asserts both of this statement and of the corresponding one (that, at all times, everything is in every-

but if it were more correctly stated it would lead to the substitution of 'matter' (conceived of as one and without qualities) for the infinite variety of primary bodies which Anaxagoras assumed.[1] The theory, common to him and others, of a beginning of movement among matter, after infinitely continued rest, would contradict the regularity of the order of nature.[2] Aristotle freely recognises the advance made when Anaxagoras formulated the doctrine of universal mind, but he considers it to be still unsatisfactory, inasmuch as, on the one hand, it did not bear fruit in the explanation of nature, and, on the other hand, as applied even to man, it misconceived the distinction between the spirit and the soul.[3]

With regard to the Eleatics (among whom he takes little account of Xenophanes and Melissus),[4] Aristotle's first point is that their philosophy contains no basis for any explanation of phenomena.[5] Their primary axioms he takes to be vitiated by grave obscurities; they talk of 'the unity of being' without keeping distinct the different meanings of unity; and thus they attribute to being such qualities as negate in turn its unconditional unity (*e.g.* limit in Parmenides, and limitlessness in Melissus). They do not understand that every proposition involves the duality of subject and predicate, of

thing), that it destroys the principle of contradiction. See ZELLER, *Ph. d. Gr.* pt. i. 911.

[1] *Metaph.* i. 8, 989, a, 30.

[2] *Phys.* viii. 1, 252, a, 10 sqq.

[3] See ZELLER, *ibid.* 887, 4, 893, 2; *De An.* i. 2, 404, b, 1, 405, a, 13.

[4] *Metaph.* i. 5, 986, b, 26; *Phys.* i. 2, 185, a, 10, i. 3 *init.*, and *De Cœlo*, ii. 13, 294, a, 21; on the other hand Parmenides is always treated with respect.

[5] *Metaph.* i. 5, 986, b, 10 sqq.; *Phys.* i. 2, 184, b, 25; *De Cœlo*, iii. 1, 298, b, 14; *Gen. et Corr.* i. 8, 325, a, 17; cf. SEXT. *Math.* x, 46.

thing and quality, so that we cannot even say that 'Being is' without distinguishing between Being as substance and the Being we attribute to it as quality— which latter, if there were only *one Being*, would necessarily be something other than Being, *i.e.* not-being.[1] The Eleatics assert the unity of Being and deny not-being, whereas in fact 'Being' is only a common predicate of all things, and 'Not-being' is perfectly thinkable as the negation of some definite kind of being (*e.g.* not large, &c.).[2] They attack the divisibility of Being, and yet at the same time describe it as extended in space.[3] They deny all 'Becoming,' and therefore the multiplicity of things, on the ground that every process of becoming must start either from Being or from Not-being, and both hypotheses are untenable. They overlook a third possibility, which not only makes Becoming conceivable, but is the sole expression of any actual process of becoming—namely, that anything becomes what it is, not out of absolute Not-being, but out of that which is *relatively* not-being.[4]

Aristotle holds that Zeno's polemic against movement rests upon similar misconceptions, inasmuch as he treated space and time not as fixed but as discrete quantities, and argued on the assumption

[1] This is the essential point of the complicated dialectical discussion in *Phys.* i. 2, 105, a, 20–c. 3 *vers. fin.* On the second half of these discussions (c. 3), cf. PLATO, *Parm.* 142, B sq., *Soph.* 244, B sqq.; and see ZELLER, *ibid.* p. 562 sq.

[2] *Phys.* i. 3, 187, a, 3; cf. ZELLER, *ibid.* 563 sq.

[3] *Metaph.* iii. 4, 1001, b, 7; cf. ZELLER, *ibid.* 541.

[4] *Phys.* i. 8, cf. *Metaph.* xiv. 2, 1009, a, 26 sqq. (The point will be treated more in detail in ch. viii. *infra.*) On the other hand, the Eleatic hypothesis is answered in *Gen. et Corr.* i. 8, 325, a, 13 merely by a reference to the opposed facts of experience.

that they consisted of an infinite number of actual subdivisions, whereas in fact they merely include *potentially* in themselves all possible subdivisions.[1] Still less importance does he attach to the arguments used by Melissus to prove that Being is limitless and motionless.[2] How can it be supposed that 'All is One,' unless we are prepared to ignore all the differences of things, and to represent even contradictory opposites as one and the same?[3] Here also Aristotle finds unproved assumptions as to the principles of things, and an absolute failure to solve the weightiest questions of philosophy.

Neither does he find a solution among the Pythagoreans, who attempted a philosophy of nature, although their principles made movement and change, which are the basis of all natural processes, inconceivable.[4] They proposed to explain the corporeal by referring it to number. Yet how can that which is extended in space be derivable from numbers, or how can weight arise out of that which is neither light nor heavy?[5] How, in fine, can the qualities of things be so derived at all?[6] What is the meaning of saying that in the formation of the world, the One, as corporeal size, was 'the centre which drew unto itself portions of the limitless'?[7]

[1] *Phys.* vi. 9, c. 2, 233, a, 21; cf. ZELLER, *ibid.* 545 sqq.

[2] *Phys.* i. 3 *init.*; cf. ZELLER, *ibid.* 554, 3.

[3] *Phys.* i. 2, 185, b, 19 sqq.

[4] *Metaph.* i. 8, 989, b, 29 sqq.

[5] *Metaph.* i. 8, 990, a, 12 sqq. iii. 4, 1001, b, 17, xiii. 8, 1083, b, 8 sqq. xiv. 3, 1090, a, 30; *De Cœlo*, iii. 1 *fin.*

[6] *Metaph.* xiv. 5, 1092, b, 15. The passage refers to Platonics and Pythagoreans together. Other remarks, which refer immediately to Plato and his school, but also apply to the Pythagoreans, need not be here cited.

[7] *Metaph.* xiii. 6, 1080. b, 16, xiv. 3, 1091, a, 13; cf. ZELLER, *ibid.* 381 sq. 349, 4.

Again, where things different in character are explained by one and the same number, are we to distinguish between different classes of numbers by reason of the differences of the things they signify, or are we to deny the variety of these things by reason of the likeness of the numbers that denote them?[1] How, again, can universal conceptions such as the One and the Infinite be of the nature of substance?[2] Finally, if we proceed to inquire as to the way in which the Pythagoreans applied their theory of numbers, we come upon singular superficiality and caprice.[3] The theory of number itself is very incompletely worked out,[4] and there are numerous untenable positions in their theory of physics which Aristotle marks with censure.[5]

Not only the earlier schools of Natural Philosophy, but also the later systems called, in Aristotle's view, for fundamental reconsideration. Only one of the later schools can be specially dealt with here, because in this connection there is no account to be taken of the Sophists. What they taught was to Aristotle's mind only a mock wisdom, which dealt in the contingent, the unessential, and the unreal.[6] His task in regard to them was, not

[1] *Metaph.* i. 8, 990, a, 18 (cf. ZELLER, *ibid.* 362, 1), vii. 11. 1036, b, 17 cf. xiv. 6, 1093, a, 1, 10.

[2] With regard to Being and the One, this view is explained (against Plato and the Pythagoreans) in *Metaph.* iii. 4, 1001, a, 9, 27 cf. x. 2; and it is there especially remarked that the assertion of the substantiality of the One would destroy the plurality of things. As to the ἄπειρον cf. *Phys.* iii. 5, and also c. 4, 203, a, 1.

[3] *Metaph.* i. 5, 986, a, 6, 987, a, 19.

[4] See ZELLER, *ibid.* 367, 2.

[5] Such as the 'Antichthon' (ZELLER, *ibid.* 383, 4), the harmony of the spheres (*De Cœlo*, ii. 9), a theory about time (*Phys.* iv. 10, 218, a, 33, cf. ZELLER, *ibid.* 406, 3 sq.), and certain views as to the soul (*De An.* i. 2, 404, a, 16, c. 3 *fin.* cf. *Anal. Post.* ii. 11, 94, b, 32).

[6] See ZELLER, *ibid.* 968.

to establish any metaphysical propositions, but to combat the scepticism which brought all manner of truth into question, and to prove the untenable nature of their sophisms.[1] The services rendered by Socrates to philosophy are by no means minimised by Aristotle, although at the same time he emphasises the limitation of Socrates' achievement to the sphere of ethics, and observes that in this connection Socrates did not establish any metaphysical basis.[2] Of the lesser Socratic schools Aristotle criticised only the Megarians, for their assertions about the relation of the possible and the actual,[3] and the Cynics, in regard to their theory of knowledge and ethics.[4]

The attention which Aristotle pays, however, to Plato and the Platonic school is as thoroughgoing as his treatment of the other Socratics is slight. His own system grew directly out of that of Plato. He was compelled, therefore,[5] to distinguish his views from those of Plato exhaustively, and to set out the arguments which led him to go beyond the Platonic school. Thus it is

[1] The former in *Metaph.* iv. 5, cf. c. 4, 1007, b, 20, x. 1, 1053, a, 35, xi. 6 *init.*; the latter in the treatise on the fallacies.

[2] Cf. the passages cited, ZELLER, *ibid.* at pp. 94, 2, and 1143 That even the Ethics of Socrates are one-sided, is shown by Aristotle in *Eth. Nic.* iii. 7, 1113, b, 14 sq. c. 11, 1116, b, 3 sqq. 1117, a, 9, vi. 13, 1114, b, 17 sqq.

[3] *Metaph.* ix. 3 (cf. ZELLER, *ibid.* 220, 1). Aristotle here confutes the Megarian principle, that the merely possible is actual, by proving that it would not only destroy all motion and change, but also all possession of skill or power: one who does not now hear would be deaf; one who is not actually building would be no architect.

[4] The former are spoken of in *Metaph.* v. 29, 1024, b, 32, viii. 3, 1043, b, 23 (cf. ZELLER, *ibid.* 252 sq.), and in *Eth. Nic.* x. 1, 1172, a, 27 sqq. Aristotle attacks the exaggerations of the moral doctrine of the Cynics.

[5] *Supra*, pp. 14, 56 sq., 162, &c.

in no spirit of jealousy or detraction that Aristotle comes back again and again to discuss the Platonic doctrines, and to set out their defects from all points of view with untiring patience; for such a criticism of his master was unavoidable if he was to defend his own philosophic individuality, and his right to found a new school, against the fame of his predecessor and the prestige of the flourishing Academy. His main criticism, leaving out of account incidental objections, is directed against three leading points: first, against the Ideal Theory, as such; secondly, against the later 'Pythagorising statement of the Theory;' and, thirdly, against the principles laid down concerning the ultimate basis of things, Matter and the One.[1]

The Ideal Theory of Plato rested upon his conviction that it is only the universal essence of things that can be an object of knowledge. This conviction was shared by Aristotle.[2] So likewise did Aristotle accept without criticism Plato's doctrine as to the mutability of all sensible things (which for Plato was the second buttress of the Ideal Theory), and the necessity to pass beyond these to something stable and essential.[3] But when Plato draws from this the conclusion that it is only the Universal, as such, which can be actual, and that it must exist for itself as something substantial beyond phenomena, Aristotle parts company with him. This, therefore, is the central point about which revolves the whole Aristotelian attack on Plato's Metaphysics. For Aristotle holds as to this assumption that it is

[1] Cf. ZELLER, *Platon. Studien*, p. 197 sqq.

[2] *Vide supra*, pp. 163, 300, &c.

[3] *Vide supra*, p. 300 sqq.

devoid of all scientific basis in itself; that it leads in its results to difficulties and contradictions absolutely insoluble, and that instead of explaining the world of phenomena, it makes them impossible.

He holds that the hypothesis of the Ideas is not established; of the Platonic arguments for it, there is not one that is not open to decisive objections.[1] The ends that Plato sought thereby to attain are and must be attainable otherwise. The content of each of these Ideas is, indeed, exactly the same as the corresponding thing of which it is said to be 'the Idea;' for in the conception of the *ideal man*, of man as such, exactly the same marks are included as in the conception of *man* in the ordinary sense, there being no difference between the two beyond the addition of the word 'ideal' (τὸ αὐτό).[2] In this view, the Ideas appear as nothing more than a needless reduplication of the world of things, and the introduction of the Ideas to explain things is to Aristotle as if a man who could not count in small numbers should attempt to count in large ones.[3] But even apart from the failure of proof, the Ideal Theory is in his view in itself untenable; for Substance cannot

[1] Cf. *Metaph.* i. 9, 990, b, 8 sqq. xiii. 4, 1079, a.

[2] *Metaph.* iii. 2, 997, b, 5: πολλαχῇ δ' ἐχόντων δυσκολίαν, οὐθενὸς ἧττον ἄτοπον τὸ φάναι μὲν εἶναί τινας φύσεις παρὰ τὰς ἐν τῷ οὐρανῷ, ταύτας δὲ τὰς αὐτὰς φάναι τοῖς αἰσθητοῖς πλὴν ὅτι τὰ μὲν ἀΐδια τὰ δὲ φθαρτά· αὐτὸ γὰρ ἄνθρωπόν φασιν εἶναι καὶ ἵππον καὶ ὑγίειαν, ἄλλο δ' οὐδέν, παραπλήσιον ποιοῦντες τοῖς θεοὺς μὲν εἶναι φάσκουσιν ἀνθρωποειδεῖς δέ· οὔτε γὰρ ἐκεῖνοι οὐθὲν ἄλλο ἐποίουν, ἢ ἀνθρώπους ἀϊδίους, οὔθ' οὗτοι τὰ εἴδη ἀλλ' ἢ αἰσθητὰ ἀΐδια. Similarly *Metaph.* vii. 16, 1040, b, 32: ποιοῦσιν οὖν [τὰς ἰδέας] τὰς αὐτὰς τῷ εἴδει τοῖς φθαρτοῖς, αὐτοάνθρωπον καὶ αὐτόϊππον, προστιθέντες τοῖς αἰσθητοῖς τὸ ῥῆμα τὸ αὐτό. *Ibid.* xiii. 9, 1086, b, 10 cf. *Eth. N.* i. 4, 1096, a, 34, *Eud.* i. 8, 1218, a, 10.

[3] *Metaph.* i. 9 *init.* xiii. 4, 1078, b, 32.

be separate from that whereof it is the Substance, nor Genus from that to which (as forming part of the essence) it belongs.[1] This proposition, in fact, summarises the whole difference between the Platonic and Aristotelian systems. Aristotle holds, however, that even if this were waived, the Platonist would only pass out of one difficulty into another. It would appear, for instance, that in reason there could only be Ideas of that which was substantial; and the Platonic school accordingly ascribed Ideas only to natural things. Yet when once it is admitted that the Universal Essence is divided among individual things, it must follow that Ideas should be ascribed also to privative and relative conceptions and to artificial products of all kinds;[2] and even among the Ideas themselves, the most of them must have Ideas over them to which they stand in the relation of copies, so that it would be true of them that the same thing would be at the same time type and copy.[3] Thus also for every thing—inasmuch as it must fall under a series of genera, superior and subordinate in form—there must be *several* Ideas;[4] or again, the various general marks which together make up a concept must be themselves so many Substances, and it would follow that one Idea would be made out of many Ideas, or one Substance out of many real Substances,

[1] *Metaph.* i. 9, 991, b, 1: *δόξειεν ἂν ἀδύνατον, εἶναι χωρὶς τὴν οὐσίαν καὶ οὗ ἡ οὐσία*; xiii. 9, 1085, a, 23, cf. vii. 6, 1031, a, 31, c. 14, 1039, b, 15.

[2] *Metaph.* i. 9, 990, b, 11 sqq. 22, 991, b, 6, xiii. 4, 1079, a, 19, c. 8, 1084, a, 27; *Anal. Post.* i. 24, 85, b, 18; cf. ZELLER, *Ph. d. Gr.* pt. i. 587, 2.

[3] *Metaph.* i. 9, 991, a, 29, xiii. 5, 1079, b, 34. In the first of these passages we should read: *οἷον τὸ γένος, ὡς γένος, εἰδῶν* (sc. *παράδειγμα ἔσται*).

[4] *Metaph.* i. 9, 991, a, 26.

and these sometimes of opposite kinds.[1] Or again, if the Idea is to be Substance, it cannot at the same time be a general concept;[2] for it is not the unity of many individual things, but an individual itself among other individuals.[3] Conversely, the things of which it is predicated could not be true subjects.[4] Of Ideas of this kind any definition would be as impossible as it is of other individuals,[5] and since the Idea, like the individual, is numerically one, it follows that one or other of the contradictory predicates by which we subdivide the genus must always be predicable of it, in which case it clearly cannot be itself the genus also.[6]

Aristotle considers the assertion that the Ideas contain the essence of things to be inconsistent with the view that they are at the same time incorporeal. He represents Plato as speaking sometimes of a 'matter of the Ideas' (that being inconsistent with the notion that they are not in space[7]), and as holding at other times that in the case of all natural objects matter and the process of becoming belongs to the essence and conception of them, in which case the conception of them cannot exist by itself separately.[8] Similarly, he argues that the ethical conceptions cannot be separated from

[1] *Metaph.* vii. 13, 1039, a, 3, c. 14; cf. c. 8, 1033, b, 19, i. 9, 991, a, 29, xiii. 9, 1085 a, 23.

[2] *Metaph.* xiii. 9, 1086, a, 32, vii. 16, 1040, a, 26 sqq. cf. iii. 6, 1003, a, 5.

[3] *Metaph.* i. 9, 992, b, 9, xiii. 9, *ut supra*.

[4] *Metaph.* vii. 6, 1031, b, 15; cf. BONITZ and SCHWEGLER on this passage, and the citation at p. 215, *supra*, from *Categ.* c. 2.

[5] *Metaph.* vii. 15, 1040, a, 8–27.

[6] *Top.* vi. 6, 143, b, 23. Length in itself must be either ἀπλατὲς or πλάτος ἔχον, and then the genus must be at once a species also.

[7] *Phys.* iv. 1, 209, b, 33; cf ZELL. *ibid.* 556 sq., 628 sq.

[8] *Phys.* ii. 2, 193 b, 35 sqq.

their objects. There can be no 'Idea of the Good' standing by itself, for the conception of the Good appears under all possible categories, and determines itself differently according to the different circumstances; and as there are different sciences that deal with the Good, so there are different kinds of good, among which there is, in fact, an ascending scale—a fact which of itself excludes the possibility of a common Idea existing by itself.[1] A further objection is that the theory of Ideas logically carried out would be a process *ad infinitum*: for if an Idea is always to be posited in every case where more things than one meet in a common definition, the common essence of the Idea and its phenomenon must always come in as a third term different from either of them.[2]

Even if the Ideal Theory were better founded and

[1] *Eth. N.* i. 4 (*Eud.* i. 8); cf. preceding notes. As to the principle that what is πρότερον and ὕστερον cannot be reduced to a common generic concept, see *Polit.* iii. 1, 1275, a, 34 sqq. (ZELL., *ibid*, 571 sq.). On the same principle in *Eth. Nic. loc. cit.* Aristotle remarks in criticising the 'Idea of the Good,' that the upholders of the doctrine of Ideas themselves say that there is no Idea of that which stands in the relation of Before and After; but this is actually the case with the Good, for it is found in all the categories: *e. g.*, a substantial good is the Divinity and Reason, a qualitative good is Virtue, a quantitive good is Measure, a relative good is the Useful, &c. Thus these different Goods stand in a relation of Before and After, and can consequently be included in no common generic concept, and therefore in no idea, but (1096, b, 25 sqq.) only in a relation of analogy. (Vide *supra*, p. 276 sqq.)

[2] *Metaph.* i. 9, 991, a, 2, vii. 13, 1039, a, cf. vii. 6, 2, 1031, b, 28. Aristotle expresses this objection here by saying that the doctrine of Ideas leads to the τρίτος ἄνθρωπος. Cf. ZELL., *Plat. Stud.* p. 257, and *Ph. d. Gr.* pt. i. p. 623, 5. He finds the parallel of the τρίτος ἄνθρωπος (which, however, is equally true of the ideas themselves, cf. *Soph. El*, c. 22, 178, b, 36) in the change of the universal into an individual of the same name.

less untenable, Aristotle would still say that it could by no means fulfil the task of a true Philosophy, which is to exhibit the basis and principles of the world of appearances. As the Ideas are not *in* things, they cannot make up the essence of things, and they cannot contribute anything to the being of things.[1] Even the relation of the one to the other cannot be stated clearly, for Plato's own references to some kind of copying and participation are always unintelligible metaphors.[2] The principle of motive power, without which no process of becoming and no explanation of nature is conceivable, is wholly wanting.[3] So also is the principle of final cause.[4] Even in regard to the theory of Knowledge, the Ideas cannot render us that service which Plato expected from them, for if they are *outside* of things, then they are not truly the essence of things, and therefore the knowledge of the Idea leads to no sure conclusion as to the thing itself.[5] And how, on the other hand, could we arrive, asks Aristotle, at any knowledge of the Ideal, since *innate* Ideas are not to be assumed?[6] All these difficulties will be vastly increased if we are to follow Plato and his school in translating the Ideas into Numbers, and so interposing

[1] *Metaph.* i. 9, 991, a, 12 (xiii. 5, *init.*).

[2] *Metaph.* i. 9, 991, a, 20, 992, a, 28 (xiii. 5, 1079, b. 24), i. 6, 987, b, 13, viii. 6, 1045, b. 7, xii. 10, 1075, b, 34.

[3] *Metaph.* i. 9, 991, a, 8. 19 sqq. b, 3 sqq. (xiii. 5) 992, a, 24 sqq. b, 7, c. 7, 988, b, 3, vii. 8, 1033, b, 26, xii. 6, 1071, b, 14, c. 10, 1075, b, 16, 27; *Gen. et Corr.* ii. 9, 335, b, 7 sqq. cf. *Eth. Eud.* i. 8, 1217, b, 23.

[4] *Metaph.* i. 7, 988, b, 6, c. 9, 992, a, 29 (where, instead of διὸ, δι' ὃ should be read).

[5] *Metaph.* i. 9, 991, a, 12 (xiii. 5, 1079, b, 15), vii. 6, 1031, a, 30 sqq. cf. *Anal. Post.* i. 22, 83, a, 32: τὰ γὰρ εἴδη χαιρέτω· τερετίσματά τε γάρ ἐστι, &c.

[6] *Vide supra*, p. 202, &c.

between the Ideas and the things of sense the whole science of Mathematics. The difficulties which would thus arise were set out by Aristotle with a painstaking thoroughness most tiresome to the modern mind, though in his day it may possibly have been needful in order to cut off all ways of escape for the Pythagorising school, led by such men as Xenocrates and Speusippus. He asks how we are to think to ourselves the causality of numbers,[1] or how they can contribute to the existence of things.[2] He shows how capricious and contradictory is the application of these numbers to natural objects.[3] He points out the difference in character between conceptual determinations, which are qualitative, and numerical determinations, which are quantitative, remarking that two numbers make up one number, but two Ideas do not make one Idea, and that among the numbers which make up numbers no qualitative differences can be posited, whereas there must be units qualitatively different if there were Ideal Numbers.[4] With minute and careful thoroughness,[5] he controverts the various suggestions as to the relations of mathematics to the Ideal Numbers which were thrown out by Plato and his school and the devices they resorted to in order to maintain a conceivable difference

[1] *Metaph.* i. 9, 991, b, 9, with the answer: if things are likewise numbers, one does not see of what use the ideal numbers are to them; if, on the other hand, things are only arranged according to number, the same would be true of the ideas of them, which would not be numbers, but λόγοι ἐν ἀριθμοῖς τινῶν (ὑποκειμένων).

[2] *Metaph.* xiv. 6 *init.*, *ibid.* 1093, b, 21 cf. c. 2, 1090, a, 7 sqq.

[3] *Loc. cit.* from 1092, b, 29; cf. the commentaries on this passage.

[4] Cf. ZELL. *Ph. d. Gr.* pt. i. p. 568 sq. 854, 867 sq. 884.

[5] *Loc. cit.* i. 9, 991, b, 21 sqq. 992, a, 2.

between the Numbers and the units which compose them.[1] But in this, as in other branches of the argument, his main point is always that there is a fundamental contradiction between the notion of a unit of number and the fact of differences of kind. It is not, of course, necessary here to recapitulate those of his objections to Ideal Numbers which apply also to the Ideal Theory in general.[2] But it is to be noticed that, in Aristotle's view, if once we assumed the existence of Ideas and Ideal Numbers, the ordinary mathematical numbers would lose their status, for they could only have the same component parts and therefore the same nature as the Ideal Numbers themselves.[3] The position of magnitudes would be equally dubious; for *quâ* ideal they must go by ideal numbers, and *quâ* mathematical they must go by mathematical number;[4] and from the way in which the theory of magnitudes is deduced, he considers that the further dilemma arises that either it must be possible for a surface to exist without line, and a solid without surface, or else all three must be one and the same.[5]

Finally, as concerns the ultimate principles of things, in which Plato and the Platonists had sought to find the ultimate basis and constituents of their Numbers and Ideas,[6] Aristotle asserts that it is impossible to know the constituent parts of all being, since that

[1] *Metaph.* xiii. 6–8.

[2] As in *Metaph.* xiii. 9, 1085, a, 23, and in xiv. 2, 1090, a, 7 sqq. c. 3, 1090, a, 25–b, 5, they are used against Speusippus.

[3] *Metaph.* i. 9, 991, b, 27; xiv. 3, 1090, b, 32 sqq.

[4] *Metaph.* i. 9, 992, b, 13; xiv. 3, 1090, b, 20.

[5] *Ibid.* i, 9, 992, a, 10; xiii. 9, 1085, a, 7, 31.

[6] Cf. ZELLER, *Ph. d. Gr.* pt. i. 628 sq., 805.

knowledge cannot be derived from any prior knowledge.[1] He doubts whether all being can have the same constituent parts,[2] or whether out of the combination of the same elements, at one time a number and at another time a magnitude could arise.[3] He remarks that such constituent parts can only be ascribed to substances, and only to those substances which have some admixture of materiality.[4] He further demonstrates that such constituent parts could neither be thought as individual nor as universal: not as individual, because they would not then be cognisable and could not be the constituents of more things or Ideas than one; not as universal, because in that case they would not be of the nature of substance.[5] In another connection, he takes exception to the variance of the Platonic suggestions as to the 'material element,'[6] and rejects altogether the assumption of Speusippus that there are more than one original but different *principia*.[7] A closer inquiry into the two Platonic ultimate principles, 'the One,' and 'the Great and Little,' leads Aristotle to declare that they are both misconceived. He asks how the One can be a thing existing by itself, when no universal is a substance. The notion of unity expresses only a

[1] *Metaph.* i. 9, 992, b, 24; against which, indeed, his own distinction of demonstrative and inductive knowledge might be used.

[2] This is suggested, without mention of Plato, in *Metaph.* xii. 4, 1070, a, 33 sqq.; cf. what was adduced on pp. 300–301, *supra*.

[3] *Metaph.* iii. 4, 1001, b, 17 sqq.

[4] *Ibid.* i. 9, 992, b, 18; xiv. 2 *init.*

[5] *Metaph.* xiii. 10, 1086, b, 19, 1087, a. 4.

[6] *Metaph.* xiv. 1, 1087, b, 4, 12, 26, c. 2, 1089, b, 11; cf. ZELLER, *Ph. d. Gr.* pt. i. p. 628, 3.

[7] Of it the remark in *Metaph.* xiv. 3, 1090, b, 13 sqq. is true, that Nature is not ἐπεισοδιώδης ὥσπερ μοχθηρὰ τραγῳδία, and in xii. 10 *fin.* the οὐκ ἀγαθὸν πολυκοιρανίη. Further cf. ZELLER, *ibid.* p. 851 sq. and the passages there adduced.

quality—or, more exactly, a determination of measure. This, however, presupposes something measured, and even that is not necessarily anything substantial, but may also be a magnitude, or a quality, or a relation, or any of the most different kinds of things, and, according as it is one or the other of these, 'the One' will be variously determined, as predicated of one or other of the similar kinds of subjects.[1] Whoever seeks to deny this will be driven to explain 'the One' as the only Substance, as did the Eleatics—a position which, apart from other objections, would make Number itself impossible.[2] Again, if with Plato we are to say that the One is the same as the Good, then there will arise other intolerable difficulties,[3] not worse, however, than those which would be raised if, with Speusippus, we attempt to distinguish the One from the Good as a special principle by itself.[4] As for 'the Great and Little,' this conception indicates nothing but bare qualities, or rather, bare relations—and these, indeed, of such a kind as could least of all be taken for anything in the nature of substance, since they manifestly require a substratum. How can substances, he asks again, consist of that which is not substantial, and how can constituent parts be at the same time predicates?[5] Or if we are to take this second principle to be more closely related to the first, as not-being is to being, such a theory would be altogether perverse. Plato believed that he could only escape the monism of Parmenides by assuming a prin-

[1] *Metaph.* x. 2; xiv. 1, 1087, b. 33, and xi. 2, 1060, a, 36; cf. *supra*, p. 312, n. 2, and p. 272, n. 2.

[2] *Metaph.* iii. 4, 1001, a, 29.

[3] *Metaph.* xiv. 4, 1091, a, 29, 36 sqq., b, 13, 20 sqq.

[4] *Metaph.* 1091, b, 16, 22, c. 5 *init.*

[5] *Metaph.* i. 9, 992, b, 1; xiv. 1, 1088, a, 15 sqq.

ciple of not-being. This assumption is not necessary for the purpose, since Being itself is not of one kind only;[1] and it would also fail of the purpose, since the manifold character of Being cannot be explained by the simple opposition of Being and not-Being.[2] According to Aristotle, Plato has not sufficiently defined Being and not-Being, and in his deduction of 'the manifold' from them he has been thinking of substance only, and not either of qualities, magnitudes, &c.,[3] or of movement; for if the 'Great and Little' produced movement, then must the Ideas whose matter it is be likewise moved.[4]

The main defect of the Platonic view lies in the position that opposition as such is the first and original principle of all things. If all does arise out of an opposition, still it is not out of mere opposition as such, which is negation, but out of relative opposition out of the substratum to which negation attaches. Everything which comes to be, presupposes a matter out of which it comes, and this matter is not simply a kind of Not-Being, but a kind of Being—which *is not* as yet that which it *is about to become*. The nature of matter in this regard was misunderstood by Plato. He had in view merely the opposition of matter as against the formative principle, and so he thinks of it as the Bad and the Not-Being, and overlooks the other side of the question—namely, that it is the positive substratum of all formative action and of all becoming.[5] By this

[1] *Metaph.* xiv. 2, 1088, b, 35 sqq. cf. p. 223, *supra*.

[2] *Ibid.* 1089, a, 12.

[3] *Ibid.* l. 15, 31 sqq.

[4] *Ibid.* i. 9, 992, b. 7.

[5] *Metaph.* xiv. 1 *init.* c. 4, 1091, b, 30 sqq.; xii. 10, 1075, a, 32 sqq.; *Phys.* i. 9, cf. ZELLER, *Ph. d. Gr.* pt. i. p. 614.

oversight he involves himself in this contradiction, that matter tends to its own annihilation, that the evil tends to the good and must of necessity assume it into itself.[1] Further contradictions arise in the considerations that the Great and Little (as was above remarked of the 'Unlimited' of the Pythagoreans) must be a thing existing for itself, a substance; whereas at the same time as a determination of number and magnitude it cannot possibly be so, and that the same principle would of necessity have to be given in actuality as unlimited, which is a position in fact unthinkable.[2] If, finally, we ask the Platonists in what way the numbers can be deduced from their ultimate principles, distinct statements are entirely wanting. We ask if they arise by a mixture, or by a composition, or by a generation, and there is no answer.[3] We are not told how out of the One and the Many could be produced those units of which numbers are composed,[4] or whether number be itself limited or unlimited.[5] There is no deduction of the first uneven number or of any of the rest except the first ten.[6] We are not shown from whence those unities arise out of which is made up the indefinite duality which, by its combination with the One, is to generate the remaining units:[7] and we are not shown how the duality of the Great and Little can, with the aid of the One, bring forth any numbers which could

[1] *Phys.* i. 9, 192, a, 19.; *Metaph.* xiv. 4, 1092, a, 1.

[2] *Phys.* iii. 5, 204, a, 8–34, cf. c. 4, 203, a, 1 sqq.

[3] *Metaph.* xiv. 5, 1092, a, 21 sqq.; xiii. 9, 1085, b, 4 sqq.; cf. c. 7, 1082, a, 20.

[4] *Metaph.* xiii. 9, 1085, b, 12 sqq. an argument immediately directed against Speusippus.

[5] *Ibid.* 1085, b, 23, c. 8, 1083, b, 36 sqq.; xii. 8, 1073, a, 18.

[6] ZELLER, *ibid.* p. 591, 3.

[7] *Metaph.* i. 9, 991, b, 31.

not arise by the doubling of the One.[1] There are a multitude of similar objections to be found in Aristotle, but these will be more than sufficient.

These criticisms of the Platonic theory are not all of equal value. Not a few of them, at least in the form in which Aristotle directly states them, rest undeniably upon a misunderstanding of Plato.[2] Nevertheless, it cannot be gainsaid that Aristotle has noted the weak points of Plato's theory with a keen insight, and has conclusively exposed its defects. Not only has he completely exhibited the obscurities and dilemmas of the theory of Ideal Numbers, but he has also refuted once for all the Ideal Theory and the assertions of Plato as to the original basis of things. Among the arguments which he uses in his attack, there are two which stand out as decisive, and to which all the others mediately or immediately return: *first*, that all universal concepts (such as those of the One, of Being, of the Great and Little, of the Unlimited, and in fact all the concepts involved in the Ideas) are in no sense substantial, and that they denote only certain qualities and relations, and at the most only the genera and species of things, and not the things themselves; *second*, that the Ideas are devoid of motive power, and not only cannot explain, but would actually make impossible the changes of phenomena, the coming to be and ceasing to be of things, change and movement, with all the natural properties of things that rest thereon.[3] In the direction

[1] *Metaph.* xiv. 3, 1091, a, 9.

[2] Cf. ZELLER, *Platon. Stud.* 257 sqq.

[3] Aristotle frequently insists on the importance which he himself attached to this objection; cf., for example, *Metaph.* i. 9, 991, a, 8: πάντων δὲ μάλιστα

of Aristotle's polemical energy to these points, we may recognise in him the spirit of the Natural Philosopher reaching out towards clear definitions of the actual world and towards an explanation of facts. His powers of abstraction are not inferior to Plato's, and he is superior to him in dialectic skill. But he is determined to give currency to such conceptions only as verify themselves by experience, in that they either combine into unity a series of phenomena, or take them back to their common cause. To the logical Idealism of Plato there is wedded in Aristotle the Realism of the student of Nature.

So far the attempt has been to state the objections Aristotle urged against his predecessors. It is time to turn to his own answers to those questions the solution of which he failed to find in them.

διαπορήσειεν ἄν τις, τί ποτε συμβάλλεται τὰ εἴδη τοῖς ἀϊδίοις τῶν αἰσθητῶν ἢ τοῖς γιγνομένοις καὶ φθειρομένοις· οὔτε γὰρ κινήσεως οὔτε μεταβολῆς οὐδεμιᾶς ἐστιν αἴτια αὐτοῖς;. and at l. 20: τὸ δὲ λέγειν παραδείγματα αὐτὰ εἶναι καὶ μετέχειν αὐτῶν τἄλλα κενολογεῖν ἐστι καὶ μεταφορὰς λέγειν ποιητικάς· τί γάρ ἐστι τὸ ἐργαζόμενον πρὸς τὰς ἰδέας ἀποβλέπον; and so *ibid.* 992, a, 24: ὅλως δὲ ζητούσης τῆς φιλοσοφίας περὶ τῶν φανερῶν τὸ αἴτιον τοῦτο μὲν εἰάκαμεν (οὐδὲν γὰρ λέγομεν περὶ τῆς αἰτίας ὅθεν ἡ ἀρχὴ τῆς μεταβολῆς), &c.

# CHAPTER VII.

## CONTINUATION.

### *The Main Inquiry of Metaphysics.*

THERE are three main questions which now fall to be discussed. In so far as the First Philosophy has to do with Actuality in general, with Being as such, it follows that the question of the original essence of the actual, which is the inquiry into the conception of Substance, must precede all other investigations. To this question Plato in his Ideal Theory had answered that that which in a true and original sense is actual was to be sought for only in the common essence of things or in their classes, which are expressed by general conceptions. Aristotle, as has been seen, was not content with the answer: but for that very reason he attributed the more importance to the relation between the individual and the universal. It was in the inaccurate statement of this relation that he found the fundamental error of Plato's view, and he felt that it was from the true conception of the same relation that any revision of Platonism must start. The first question for Philosophy, therefore, must be an inquiry into the conception of 'substance,' which is an inquiry into the relation of the individual to the universal. But inasmuch as Aristotle defines that relation in such a way as to throw

[1] See p. 290 sqq. *supra*.

essential actuality to the side of the individual, it follows that the Form, or the εἶδος, which Plato had made identical with the universal, becomes detached from the universal in Aristotle and takes on an altered meaning. To him Form is essence determinate and developed into full actuality: undetermined universality, which is the possibility of Being, not yet determined this way or that, is considered as Matter in opposition to Form. The relation of Form and Matter accordingly furnishes the second main object of Metaphysics. Form, in fine, is essentially related to Matter, and Matter to Form; and this relation consists in the fact that Matter becomes definite through Form. This process is Movement. All movement, however, presupposes a first cause of movement, and in this way movement and the first motor constitute the third pair of concepts with which Metaphysics is concerned. In the following pages Aristotle's theory will be set forth under these three heads.

### (1) *The Individual and the Universal.*

Plato had taken as the essential element in things 'the universal as it is thought in conception,' and had ascribed Being, in its fullest and original sense, to that only. It was by a limitation of this Being, by a combination of Being with Not-Being, that individual entities could arise. These, therefore, had, outside and above them, as something other than themselves, the universal essences, which were the Ideas. Aristotle denies this, for he finds the fundamental error of the Ideal Theory in this *separation* of the conceptual essence from

the thing itself.[1] A universal is that which belongs to many things in common,[2] or, more accurately, that which belongs to them by reason of their nature, and therefore, necessarily and always.[3] It follows that all universal concepts denote only certain of the properties of things; or, in other words, are predicates and not subjects. Even when a number of these properties are combined to make the conception of a genus, we get thereby something which belongs to all the things pertaining to the genus in question, but by no means a universal subsisting beside them as distinct. For Plato's ἓν παρὰ τὰ πολλὰ is substituted Aristotle's ἓν κατὰ πολλῶν.[4] If, then, the universal is not anything subsisting by itself, it cannot be Substance. It is true that the name of Substance[5] is used in various

[1] See p. 316, n. 1, *supra*. *Metaph.* xiii. 9, 1086, b, 2: τοῦτο δ' [the doctrine of Ideas] . . . ἐκίνησε μὲν Σωκράτης διὰ τοὺς ὁρισμούς, οὐ μὴν ἐχώρισέ γε τῶν καθ' ἕκαστον· καὶ τοῦτο ὀρθῶς ἐνόησεν οὐ χωρίσας . . . ἄνευ μὲν γὰρ τοῦ καθόλου οὐκ ἔστιν ἐπιστήμην λαβεῖν, τὸ δὲ χωρίζειν αἴτιον τῶν συμβαινόντων δυσχερῶν περὶ τὰς ἰδέας ἐστιν. Cf. c. 4, 1078, b, 30 sq.

[2] *Metaph.* vii. 13, 1038, b, 11; τὸ δὲ καθόλου κοινόν· τοῦτο γὰρ λέγεται καθόλου ὃ πλείοσιν ὑπάρχειν πέφυκεν; iii. 4, 999, b, 34: οὕτω γὰρ λέγομεν τὸ καθέκαστον τὸ ἀριθμῷ ἕν, καθόλου δὲ τὸ ἐπὶ τούτων. *De Interpr.* 7, 17, a, 39; *Part. An.* i. 4, 644, a 27, and *supra*.

[3] *Anal. Post.* i. 4, 73, b, 26: καθόλου δὲ λέγω ὃ ἂν κατὰ παντός τε ὑπάρχῃ καὶ καθ' αὑτὸ καὶ ᾗ αὐτό. φανερὸν ἄρα ὅτι ὅσα καθόλου ἐξ ἀνάγκης ὑπάρχει τοῖς πράγμασιν; c. 31, 87, b, 32: τὸ γὰρ ἀεὶ καὶ πανταχοῦ καθόλου φαμὲν εἶναι. *Metaph.* v. 9, 1017, b, 35: τὰ γὰρ καθόλου καθ' αὑτὰ ὑπάρχει. See also BONITZ, *Ind. Arist.* 356, b, 4 sqq. KAMPE, *Erkenntnissth. d. Arist.* 160 sq.

[4] *Anal. Post.* i. 11 *init.*: εἴδη μὲν οὖν εἶναι ἢ ἕν τι παρὰ τὰ πολλὰ οὐκ ἀνάγκη, εἰ ἀπόδειξις ἔσται· εἶναι μέντοι ἓν κατὰ πολλῶν ἀληθὲς εἰπεῖν ἀνάγκη. *De An.* iii. 8 (see p. 195, n. 1, *supra*).

[5] Aristotle's οὐσία is of course here and elsewhere translated by 'substance.' It is strange to find this translation attacked (by STRÜMPELL, *Gesch. d. theor. Phil. b. d. Gr.* 213 sq.; cf. ZELLER, *Ph. d. Gr.* pt. i. 555, 1) on the ground that Aristotle nowhere understands by οὐσία 'the unknown, constant, and real substratum of variable attributes.' It cannot, however, be expected that we should cease to use for

senses,[1] but it applies originally only to that which can neither be stated as a definition of the essence of anything else, nor can depend upon anything else as a derivative.[2] In other words, Substance is that which is only subject and never predicate.[3] Or again, Substance is Being in its original sense, the source from which all other being is drawn.[4] These conditions Aristotle finds fulfilled only in individuals. The universal, as he proved against Plato, does not subsist for itself. Every universal, even the genus, has its existence only in the individuals of which it is predicated. It is always in something other than itself. It denotes not 'this thing,' but only a stated condition of things. The individual alone is that which belongs to itself only, which is not borne up by some other, which is what it is by reason of itself, and not upon the basis of some

an Aristotelian term the word which the custom of 1,500 years has consecrated to it, simply because Herbart connects the same word with another sense.

[1] On the different meanings of οὐσία, see p. 374 sq., *infra*.

[2] *Cat.* c. 5: οὐσία δέ ἐστιν ἡ κυριώτατά τε καὶ πρώτως καὶ μάλιστα λεγομένη, ἣ μήτε καθ' ὑποκειμένου τινὸς λέγεται μήτ' ἐν ὑποκειμένῳ τινί ἐστιν, οἷον ὁ τὶς ἄνθρωπος ἢ ὁ τὶς ἵππος. Cf. further TRENDELENBURG, *Hist. Beitr.* i. 53 sqq.

[3] Aristotle himself elsewhere so defines it. *Metaph.* v. 8, 1017, b, 13: ἅπαντα δὲ ταῦτα λέγεται οὐσία ὅτι οὐ καθ' ὑποκειμένου λέγεται, ἀλλὰ κατὰ τούτων τὰ ἄλλα; vii. 3, 1028, b, 36: τὸ δ' ὑποκείμενόν ἐστι καθ' οὗ τὰ ἄλλα λέγεται, ἐκεῖνο δὲ αὐτὸ μηκέτι κατ' ἄλλου. διὸ πρῶτον περὶ τούτου διοριστέον· μάλιστα γὰρ δοκεῖ εἶναι οὐσία τὸ ὑποκείμενον πρῶτον . . . νῦν μὲν οὖν τύπῳ εἴρηται τί ποτ' ἐστὶν ἡ οὐσία, ὅτι τὸ μὴ καθ' ὑποκειμένου ἀλλὰ καθ' οὗ τὰ ἄλλα. Cf. *Anal. Pri.* i. 27, 43, a, 25; *Longit. V.* 3, 465, b, 6.

[4] *Metaph.* vii. 1 *init.*: τὸ ὂν λέγεται πολλαχῶς [in the different categories] . . . φανερὸν ὅτι τούτων πρῶτον ὂν τὸ τί ἐστιν, ὅπερ σημαίνει τὴν οὐσίαν . . . τὰ δ' ἄλλα λέγεται ὄντα τῷ τοῦ οὕτως ὄντος τὰ μὲν ποσότητας εἶναι, τὰ δὲ ποιότητας, &c. . . . ὥστε τὸ πρώτως ὂν καὶ οὐ τὶ ὂν [what is nothing else than itself and applies to nothing else; cf. *Anal. Post.* i. 4, and the remarks which follow] ἀλλ' ὂν ἁπλῶς ἡ οὐσία ἂν εἴη; c. 7, 1030, a, 22: τὸ τί ἐστιν ἁπλῶς τῇ οὐσίᾳ ὑπάρχει. See further on p. 289.

other being.[1] Only in a derivative sense can the genera be called substances: in so far, that is to say, as they set forth the common essence of a certain number of substances;[2] and they claim a kind of

[1] *Cat.* c. 5, 2, a, 34: τὰ δ' ἄλλα πάντα ἤτοι καθ' ὑποκειμένων λέγεται τῶν πρώτων οὐσιῶν ἢ ἐν ὑποκειμέναις αὐταῖς ἐστίν . . . μὴ οὐσῶν οὖν τῶν πρώτων οὐσιῶν ἀδύνατον τῶν ἄλλων τι εἶναι. *Anal. Post.* i. 4, 73, b, 5, where Aristotle calls καθ' αὑτὸ that ὃ μὴ καθ' ὑποκειμένου λέγεται ἄλλου τινὸς, οἷον τὸ βαδίζον ἕτερόν τι ὂν βαδίζον ἐστὶ καὶ λευκὸν, ἡ δ' οὐσία, καὶ ὅσα τόδε τι, οὐχ ἕτερόν τι ὄντα ἐστὶν ὅπερ ἐστίν· τὰ μὲν δὴ μὴ καθ' ὑποκειμένου [sc. λεγόμενα] καθ' αὑτὰ λέγω, τὰ δὲ καθ' ὑποκειμένου συμβεβηκότα. *Metaph.* vii. 1, 1028, a, 27: that which supports all qualities is said to be ἡ οὐσία καὶ τὸ καθ' ἕκαστον . . . τῶν μὲν γὰρ ἄλλων κατηγορημάτων οὐθὲν χωριστὸν, αὕτη δὲ μόνη; c. 3, 1029, a, 27: τὸ χωριστὸν καὶ τὸ τόδε τι ὑπάρχειν δοκεῖ μάλιστα τῇ οὐσίᾳ; c. 4, 1030, a, 19: τὴν οὐσίαν καὶ τὸ τόδε τι; c. 10, 1035, b, 28: καθόλου δ' οὐκ ἔστιν οὐσία; c. 12, 1037, a, 27: ἡ οὐσία ἕν τι καὶ τόδε τι σημαίνει ὡς φαμέν; c. 13, 1038, b, 10: πρώτη οὐσία ἴδιος ἑκάστῳ ἣ οὐχ ὑπάρχει ἄλλῳ, τὸ δὲ καθόλου κοινόν. *Ibid.* l. 34: ἔκ τε δὴ τούτων θεωροῦσι φανερὸν ὅτι οὐθὲν τῶν καθόλου ὑπαρχόντων οὐσία ἐστὶ, καὶ ὅτι οὐθὲν σημαίνει τῶν κοινῇ κατηγορουμένων τόδε τι, ἀλλὰ τοιόνδε; c. 16, 1040, b, 23: κοινὸν μηθὲν οὐσία· οὐδενὶ γὰρ ὑπάρχει ἡ οὐσία ἀλλ' ἢ αὐτῇ τε καὶ τῷ ἔχοντι αὐτὴν οὗ ἐστὶν οὐσία. *Ibid. fin.*: τῶν καθόλου λεγομένων οὐθὲν οὐσία; xii. 5 *init.*: ἐπεὶ δ' ἐστὶ τὰ μὲν χωριστὰ, τὰ δὲ οὐ χωριστὰ, οὐσίαι ἐκεῖνα. καὶ διὰ τοῦτο πάντων αἴτια ταῦτα; iii. 6, 1003, a, 8: οὐθὲν γὰρ τῶν κοινῶν τόδε τι σημαίνει, ἀλλὰ τοιόνδε, ἡ δ' οὐσία τόδε τι. *Soph. El.* c. 22, 178, b, 37 (cf. *ibid.* 179, a, 8): τὸ γὰρ ἄνθρωπος καὶ ἅπαν τὸ κοινὸν οὐ τόδε τι, ἀλλὰ τοιόνδε τι ἢ πρός τι ἢ πῶς ἢ τῶν τοιούτων τι σημαίνει. (This holds even of the sensible qualities of things; see p. 206, *supra*.) *Gen. An.* iv. 3, 767, b, 33: τὸ καθέκαστον· τοῦτο γὰρ ἡ οὐσία. All other categories indicate mere accidents (συμβεβηκότα) of substance; cf. p. 289 *supra*. Aristotle finds it therefore quite natural (*Metaph.* vii. 16, 1040, b, 26 sq.) that the ideas should be made into a χωριστόν if they are taken for substances. The error of the doctrine of ideas consisted only in regarding the universal as such a substantial idea. (HERTLING, *Mat. und Form*, 44, 1, has misunderstood this statement.)

[2] *Cat.* c. 5, 2, a, 15: δεύτεραι δὲ οὐσίαι λέγονται ἐν οἷς εἴδεσιν αἱ πρώτως οὐσίαι λεγόμεναι ὑπάρχουσι, ταῦτά τε καὶ τὰ τῶν εἰδῶν τούτων γένη . . . οἷον ὅ τε ἄνθρωπος καὶ τὸ ζῷον. And so further on. Otherwise the expression δευτέρα οὐσία does not occur in Aristotle. As, however, he elsewhere uses πρώτη οὐσία for 'substance in the primary sense,' and τρίτη οὐσία for 'third class of substances,' no objection can be taken, as we have already remarked (in n. 1 to p. 64).

substantial character with the more right the nearer they approach to individual substances, so that the species deserves to be called substantial in a higher degree than the genus.[1] According to the strict conception of substance, however, that term cannot be applied to them at all, because they are predicated of individuals,[2] and because it is true of them, as of every universal, that they are not a 'This,' but a 'Such' — not substantive, but adjective—and that they express, not substance, but a condition of substance.[3]

The further marks of substance which Aristotle gives us, likewise refer, in so far as they are really characteristic of that conception, to individual substances only.[4] The so-called secondary substance of

[1] *Cat.* c. 5, 2, b, 7 sq. Aristotle, indeed, seems to say the opposite in *Metaph.* viii. 1, 1042, a, 13: *ἔτι ἄλλως [συμβαίνει] τὸ γένος μᾶλλον τῶν εἰδῶν [οὐσίαν εἶναι] καὶ τὸ καθόλου τῶν καθέκαστα*; but he does not intend to express his own view in these words; cf. vii. 13; BONITZ and SCHWEGLER *in loco.*

[2] *Cat.* c. 5, 2, a, 19 sq., b, 15–21.

[3] See n. 1 on last page. *Cat.* c. 5, 3, b, 10: *πᾶσα δὲ οὐσία δοκεῖ τόδε τι σημαίνειν.* Of. *πρῶται οὐσίαι* this holds unconditionally: *ἐπὶ δὲ τῶν δευτέρων οὐσιῶν φαίνεται μὲν ὁμοίως τῷ σχήματι τῆς προσηγορίας τόδε τι σημαίνειν . . . οὐ μὴν ἀληθές γε, ἀλλὰ μᾶλλον ποιόν τι σημαίνει· οὐ γὰρ ἕν ἐστι τὸ ὑποκείμενον ὥσπερ ἡ πρώτη οὐσία, ἀλλὰ κατὰ πολλῶν ὁ ἄνθρωπος λέγεται καὶ τὸ ζῷον.*

[4] The first characteristic of substance was *τὸ μὴ καθ' ὑποκειμένου λέγεσθαι.* That this is true only of individual substance has been shown. A second (*Cat.* 5, 3, a, 6 sq., and p. 331, n. 2, *supra*) is *τὸ μὴ ἐν ὑποκειμένῳ εἶναι.* But this characteristic belongs also to the class, and not to it alone, but likewise (*Cat.* c. 5, 3, a, 21 &c.) to the specific difference, since this is likewise contained in the conception of the thing to which it applies; while (according to Aristotle, *ibid.*) only that is *ἐν ὑποκειμένῳ* which does not belong to the conception of that of which it is predicated, but which is a quality in a substance quite independent of it: *e.g.* in the sentence 'the body is white,' *λευκὸν* is *ἐν ὑποκειμένῳ*; on the other hand, in the sentence 'man is two-legged,' *δίπουν* is not *ἐν ὑποκειμένῳ.* A further peculiarity of substance is (*Cat.* c. 5, 3, b, 24) *τὸ μηδὲν αὐταῖς ἐναντίον εἶναι.* And yet Aristotle himself remarks that the same

Aristotle cannot be treated as exactly identical with quality, but neither can it properly be considered substance. It denotes substance on the side of its qualities only. For it is the combination of the essential properties of a definite class of substances.[1] In contrast with it, it is the individual substances alone which are of that self-sufficient and independently subsisting nature to which the name of substance, in its original sense, belongs.

This view, however, is not without its difficulties. If all knowledge is concerned with the actual,[2] then it is only the actual, in the highest and truly original sense of the word, which can furnish the original and ultimate object of knowledge. If knowledge is the recognition of reality,[3] it must relate, in the first place, to real Being, which is the substance of things.[4] If this substance is individual substance, it follows that,

is the case with determinations of quantity and many other conceptions. And the same reply may be made if (*ibid.* l. 33) it be said that substance is susceptible of no difference of degree, no greater or less. For while, perhaps, we might say that one is more or less of a 'man' than another, yet we could in no sense say that he is more or less 'two-legged.' If, finally (*ibid.* 4, a, 10, b, 3, 17), we take as the most distinctive quality of substance: τὸ ταὐτὸν καὶ ἓν ἀριθμῷ ὂν τῶν ἐναντίων εἶναι δεκτικόν, τὸ κατὰ τὴν ἑαυτῆς μεταβολὴν δεκτικὴν τῶν ἐναντίων εἶναι, this holds only of individual substance, since to classes the conceptions of numerical unity and change are inapplicable. The statement, moreover, contains a questionable identification of substance with matter, to which we shall have again to refer.

[1] *Cat.* c. 5, 3, b, 18: (after the passage quoted in n. 3 on p. 333): οὐκ ἁπλῶς δὲ ποιόν τι σημαίνει, ὥσπερ τὸ λευκόν. οὐδὲν γὰρ ἄλλο σημαίνει τὸ λευκὸν ἀλλ' ἢ ποιόν. τὸ δὲ εἶδος καὶ τὸ γένος περὶ οὐσίαν τὸ ποιὸν ἀφορίζει· ποιὰν γάρ τινα οὐσίαν σημαίνει. Cf. SIMPL. *Kat.* 26, β Bas., who explains ποιά τις οὐσία by ποιότης οὐσιώδης.

[2] See p. 162.

[3] *Ibid.* and p. 219, n. 1.

[4] *Metaph.* vii. 4, 1030, b, 4: ἐκεῖνο δὲ φανερὸν ὅτι ὁ πρώτως καὶ ἁπλῶς ὁρισμὸς καὶ τὸ τί ἦν εἶναι τῶν οὐσιῶν ἐστιν. See also p. 219, n. 1.

in the last resort, all knowledge is of the individual, and that individual things furnish, not only the starting-point, but the whole essential content and object of knowledge. This conclusion, however, Aristotle decisively rejects. He is convinced that Science relates, not to the individual, but to the universal, and even when it descends furthest to particulars, it addresses itself all the while, not to the individual things, as such, but to general conceptions only.[1] This contradiction in his system cannot be met by the observation[2] that it is only in the realm of natural being that the individual is first, whereas in the realm of spirits the universal is first. Aristotle himself knows nothing of any such distinction. He says, without any kind of limitation, that knowledge is directed to the universal only, and, equally without qualification, that it is individual essence only which is substantial; and he chooses the examples with which he illustrates both propositions from the natural and the spiritual world alike.[3] Even God is individual Substance. The fact that Substance and Form run together proves nothing: for, as will be seen, there recurs in the working out of the conception of Form the same difficulty which now engages us with regard to Substance.

Aristotle himself recognised the full weight of the difficulty,[4] and he seems to indicate another way

[1] Pp. 162 sqq., and 220 sqq. *supra*. Cf. in *Anal. Post.* i. 24, 85, a, 20 sq, the argument that the general method proof is better than the particular; and *ibid.* c. 14, 79, a, 28: τὸ δὲ τί ἐστι τῶν καθόλου ἐστίν.

[2] BIESE, *Phil. d. Arist.* i. 56 sq.

[3] Cf. with regard to the first, *Metaph.* xiii. 10, 1086, b, 33 sq., i. 1, 981, a, 7; *Anal. Post.* i. 31; in regard to the second, *Cat.* c. 5, 3, b, 14 sq.; *Metaph.* vii. 10, 1035, b, 27, c. 16, 1040, b, 21, xii. 5, 1071, a, 2.

[4] *Metaph.* iii. 4 *init.*: ἔστι δ'

of escape in the remark[1] that Knowledge, considered *in posse*, is indeterminate and is directed to the universal, but that in actual practice, on the contrary, it is always directed to something determinate. This, however, does not take us very far. The knowledge of the particular arises only by the application of universal propositions The certitude of that knowledge depends on their certitude. Such knowledge, therefore, as Aristotle expressly recognises,[2] has not for its object the individual as such, but, on the contrary, the individual is known by it only in the form of universality.[3] On the other hand, if the individual be that which is original actuality, then it ought to be precisely, *quâ* individual, the proper object of knowledge, and the knowledge of the universal ought to depend upon it for its truth and certainty. In fact, it would be the individual—and not, as Aristotle taught,[4] the universal—which should be in its own nature the better known and the more certain.[5]

ἐχομένη τε τούτων ἀπορία καὶ πασῶν χαλεπωτάτη καὶ ἀναγκαιοτάτη θεωρῆσαι, περὶ ἧς ὁ λόγος ἐφέστηκε νῦν· εἴτε γὰρ μὴ ἔστι τι παρὰ τὰ καθέκαστα, τὰ δὲ καθέκαστα ἄπειρα, τῶν δ' ἀπείρων πῶς ἐνδέχεται λαβεῖν ἐπιστήμην; c. 6 *fin.*: εἰ μὲν οὖν καθόλου αἱ ἀρχαὶ, ταῦτα συμβαίνει· [viz. οὐκ ἔσονται οὐσίαι· οὐθὲν γὰρ τῶν κοινῶν τόδε τι σημαίνει, ἀλλὰ τοιόνδε, ἡ δ' οὐσία τόδε τι, as he says before,] εἰ δὲ μὴ καθόλου, ἀλλ' ὡς τὰ καθέκαστα, οὐκ ἔσονται ἐπιστηταί· καθόλου γὰρ αἱ ἐπιστῆμαι πάντων. Cf. *Metaph.* xi. 2, 1060, b, 19, xiii. 10, also vii. 13, 1039, a, 14.

[1] *Metaph.* xiii. 10; see p. 167, n. 1 *supra*.

[2] See especially p. 220, &c., *supra*.

[3] Τῷ καθόλου λόγῳ, as Aristotle expresses it, *Metaph.* vii. 10 (see pp. 220 sqq., *supra*).

[4] See p. 205, n. 2, *supra*.

[5] RASSOW's solution (*Aristot. de Notionis Definitione Doctrina*, p. 57) is equally unsatisfactory. He appeals to *Metaph.* vii. 10, 1035, b, 28 (where, moreover, after the words ὡς καθόλου, which stand in opposition to the following καθ' ἕκαστον, we have simply to supply an εἰπεῖν) and c. 4, 1029, b, 19, and tries to solve the contradiction by remarking that in definition and in science generally the individual is regarded

If, conceding this, we were to say that the genus had in itself more of the essential than the species, but that, on the contrary, *for us* the species had more than the genus,[1] we should thereby place ourselves in opposition to the definite statements of Aristotle, who continually insists that all Substance, in the strict sense of the word, *is* individual Substance - not that it appears to *us* as such. There is only one case which would make it possible to escape the difficulty: that is, if there were a principle which, being individual, could be at the same time truly universal, for this could be at the same time, as substantial, a basis of actuality, and, as universal, a basis of truth. Such a principle seems to be found in the keystone of Aristotle's entire system—namely, in his theory of Pure Thought, or of God. To him the Divine, as thinking Essence, is Subject; as the End, Mover and Form of the world, it is also a true universal. The conception of it has existence in one individual Essence, not merely contingently,[2] but by reason of its own nature; whereas, in all finite things, the universal presents itself, or at least might present itself, in a number of individuals.[3] From this standpoint it would be possible to seek a solution of the difficulties suggested, by saying that in God, as the

not as individual, but from the universal side of its being. That is just the reason why it would require to be otherwise if the individual were the substantial.

[1] BRANDIS, ii. b, 568, whose answer to this question is not altogether clear.

[2] As perhaps that of the sun or of the moon; see p. 222, n. 2, *supra*.

[3] *Metaph*. xii. 10, 1074, a, 33; ὅσα ἀριθμῷ πολλὰ [everything of which several examples are contained in the same class] ὕλην ἔχει· εἷς γὰρ λόγος καὶ ὁ αὐτὸς πολλῶν, οἷον ἀνθρώπου, Σωκράτης δὲ εἷς· τὸ δὲ τί ἦν εἶναι οὐκ ἔχει ὕλην τὸ πρῶτον, ἐντελέχεια γάρ.

ultimate principle, absolute certitude for thought coincides with absolute actuality of being, but that, in all derivative forms of being, the greater actuality falls to the share of the individual and the greater cognisability to the share of the universal. That this solution, however, would be in accordance with all Aristotle's premisses is not yet proven. Aristotle himself does not draw the distinction. He says without any qualification that all knowledge consists in the cognition of the universal, and that substantiality pertains to individuals alone. Even if we were to limit the first of these propositions to the world of sense,[1] its incompatibility with the second would not disappear. Aristotle's view is not that knowledge is directed to the universal because *we* are incapable of perfectly knowing the individual as such. It is, on the contrary, that *in spite of* the fact that the individual things of sense are better known to us, the universal must furnish the sole object of knowledge in the strict sense, because it is *in itself* more original and more cognisable because it alone possesses that immutability which anything that is to be the object of knowledge must afford.[2] The further conclusion is inevitable, that, in comparison with the individual things of sense, it must possess a higher degree of actuality also. And we shall also find[3] the individual can only arise through the combination

[1] As G. v. HERTLING does, *Mat. u. Form b. Arist.* 43, f., remarking that the form of universality is not in all spheres the indispensable condition of knowledge, but only where we are dealing with the knowledge of the material world. Here it is the only resource we have in face of the partial unknowableness of all material things.

[2] See pp. 205 and 220, *supra*.

[3] *Infra*, p. 368.

of Form with Matter. But one cannot understand how reality can belong in a higher degree and a more primary sense to that which is a combination of Form and Matter, of Actual and Possible, than to that which is pure Form as it is known in universal concepts, *i.e.* to the Actual which is limited by no element of mere Possibility.[1] It only remains, then, to recognise in this point, not merely a lacuna, but a deep contradiction in the philosophy of Aristotle.[2] He has set aside the Platonic attempt to hypostatise the universal concepts, but he leaves standing its two main pillars, the assumptions, namely, that it is only the universal that can be the object of knowledge and that the truth of knowledge keeps pace with the actuality of its object.[3] How was it possible to hold these two positions together in thought without involving contradictions?

We need not expect, threfore, to avoid contradictions in working out the further developments of his theory, by which Aristotle sought a solution of the questions which the Ideal theory and the doctrines connected therewith had left unanswered.

[1] Even HERTLING fails to make this intelligible, when he goes on to say in the passage just quoted that that only is object of knowledge which is of permanent worth in things. This in the sphere of sense is never the whole thing, but is entangled with all that is accidental and that has its source in matter. He thus suggests the question how the thing in which the permanent worth is mixed with the accidental can be anything more substantial than the form which presents it pure.

[2] Since RITTER, iii. 130, called attention to this difficulty it has been further discussed by HEYDER; cf. *Arist. und hegel. Dial.* 180, 183 sq., and ZELLER's first edition, p. 405 sq., which was followed by BONITZ, *Arist. Metaph.* ii. 569. SCHWEGLER, *Arist. Metaph.* iii. 133. Cf. also STRÜMPELL, *Gesch d. Phil.* 251 sq.

[3] Cf. ZELLER, *Ph. d. Gr.* pt. i. 541 sq.

### (2) *Form and Matter: the Actual and the Possible.*

We must now go back to Plato. In the Ideas he had distinguished the non-sensible essence of things from their sensible appearance. Aristotle refused to think of the former as a universal subsisting for itself outside of things. Yet he does not wish to abandon the distinction, and the grounds on which he bases it are the same as those of Plato—namely, that the non-sensible Form can alone be an object of knowledge, and that it alone is permanent amid the change of appearances. He says, as Plato said, that as perception is different from knowledge, it is equally clear that the object of knowledge must be something other than sensible things. All that is sensible is passing and changeful; it is a 'contingent' which may be one way or may be another. What knowledge requires, on the contrary, is an object as unchangeable and necessary as itself, which can as little change into its opposite as knowledge can into ignorance. Of sensible things we can have neither a concept nor a proof; it is the Form alone with which knowledge has to do.[1] Form, indeed, is also the indispensable condition of all Becoming: since everything that becomes, comes to be something from being something else. Becoming, then, consists in this, that some matter takes on a definite Form. This Form must therefore be posited before each case

[1] *Metaph.* vii. 11, 15 (see p. 220, *supra*), with which cf. *ibid.* iii 4, 999, b, 1: *εἰ μὲν οὖν μηθέν ἐστι παρὰ τὰ καθ' ἕκαστα, οὐθὲν ἂν εἴη νοητὸν ἀλλὰ πάντα αἰσθητὰ καὶ ἐπιστήμη οὐθενὸς, εἰ μή τις εἶναι λέγει τὴν αἴσθησιν ἐπιστήμην. ἔτι δ' οὐδ' ἀΐδιον οὐθὲν οὐδ' ἀκίνητον*; iv. 5, 1010, a, 25: *κατὰ τὸ εἶδος ἅπαντα γιγνώσκομεν.*

of Becoming as the aim and end thereof; and even supposing that in any particular case the Form could itself originate in the process of Becoming, yet in any case such a supposition could not be carried *ad infinitum*, for if it could, we should never arrive at a true instance of actual Becoming. The fact of Becoming, in other words, is inexplicable unless it be true that before anything came to be[1] there was a Form[2] which itself had not come to be.

For the same reason there must also be Matter as the correlative of Form. The relation of these two should not be defined, as Plato defined it, merely as one

[1] Εἶδος, μορφή, λόγος (see p. 219, n. 1, *supra*), οὐσία (*infra*, p. 275), τὸ τί ἦν εἶναι (see p. 217, n. 1, *supra*).

[2] *Metaph.* iii. 4, 999, b, 5: ἀλλὰ μὴν εἴ γε ἀΐδιον οὐθέν ἐστιν, οὐδὲ γένεσιν εἶναι δυνατόν· ἀνάγκη γὰρ εἶναί τι τὸ γιγνόμενον καὶ ἐξ οὗ γίγνεται καὶ τούτων τὸ ἔσχατον ἀγέννητον εἴπερ ἵσταταί τε καὶ ἐκ μὴ ὄντος γενέσθαι ἀδύνατον . . . ἔτι δ' εἴπερ ἡ ὕλη ἐστὶ διὰ τὸ ἀγέννητος εἶναι, πολὺ ἔτι μᾶλλον εὔλογον εἶναι τὴν οὐσίαν ὅ ποτε ἐκείνη γίγνεται. [οὐσία as that which ὕλη becomes] εἰ γὰρ μήτε τοῦτο ἔσται μήτε ἐκείνη, οὐθὲν ἔσται τὸ παράπαν. εἰ δὲ τοῦτο ἀδύνατον, ἀνάγκη τι εἶναι παρὰ τὸ σύνολον τὴν μορφὴν καὶ τὸ εἶδος; vii. 8 *init.*: ἐπεὶ δε ὑπό τινός τε γίγνεται τὸ γιγνόμενον . . . καὶ ἔκ τινος [*e.g.* out of brass] . . . καὶ ὃ γίγνεται [*e.g.* a ball] . . . ὥσπερ οὐδὲ τὸ ὑποκείμενον ποιεῖ τὸν χαλκόν, οὕτως οὐδὲ τὴν σφαῖραν εἰ μὴ κατὰ συμβεβηκός . . . λέγω δ' ὅτι τὸν χαλκὸν στρογγύλον ποιεῖν ἐστὶν οὐ τὸ στρογγύλον ἢ τὴν σφαῖραν ποιεῖν, ἀλλ' ἕτερόν τι, οἷον τὸ εἶδος τοῦτο ἐν ἄλλῳ. The form, again, could only come from another form, and so on *ad infinitum*, since all coming to be is the embodiment of form in matter. φανερὸν ἄρα ὅτι οὐδὲ τὸ εἶδος . . . οὐ γίγνεται . . . οὐδὲ τὸ τί ἦν εἶναι . . . ὅτι τὸ μὲν ὡς εἶδος ἢ οὐσία λεγόμενον οὐ γίγνεται, ἡ δὲ σύνοδος ἡ κατὰ ταύτην λεγομένη γίγνεται, καὶ ὅτι ἐν παντὶ τῷ γενομένῳ ὕλη ἔνεστι, καὶ ἔστι τὸ μὲν τόδε τὸ δε τόδε; c. 9, 1034, b, 7: οὐ μόνον δὲ περὶ τῆς οὐσίας ὁ λόγος δηλοῖ τὸ μὴ γίγνεσθαι τὸ εἶδος, ἀλλὰ περὶ πάντων ὁμοίως τῶν πρώτων κοινὸς ὁ λόγος, οἷον ποσοῦ ποιοῦ, &c. It is not the ball, nor is it the brass, that comes to be, but the brass ball, not ποιὸν but ποιὸν ξύλον; xii. 3 *inst.*: οὐ γίγνεται οὔτε ἡ ὕλη οὔτε τὸ εἶδος, λέγω δὲ τὰ ἔσχατα, πᾶν γὰρ μεταβάλλει τὶ καὶ ὑπό τινος καὶ εἴς τι. ὑφ' οὗ μέν, τοῦ πρώτου κινοῦντος· ὃ δέ, ἡ ὕλη· εἰς ὃ δέ, τὸ εἶδος. εἰς ἄπειρον οὖν εἶσιν, εἰ μὴ μόνον ὁ χαλκὸς γίγνεται στρογγύλος, ἀλλὰ καὶ τὸ στρογγύλον ἢ ὁ χαλκός· ἀνάγκη δὲ στῆναι. *Ibid.* 1070, a, 15, viii. 3, 1043, b, 16, c. 5, 1044, b, 22.

of opposition, in the sense that all true Being would fall exclusively to the share of Form, and that there would remain for Matter only the sphere of Not-Being. Here again arises the old question of the possibility of Becoming.[1] It might seem that out of Being nothing could come to be, since it is already: and out of Not-Being nothing also, for *ex nihilo nihil fit.* Aristotle finds it possible to avoid this difficulty only by saying that all which comes to be starts in the process of Becoming out of that which *is* only in a relative sense and in a relative sense *is not.* That from which anything comes to be cannot be absolutely Not-Being, but at the same time it cannot be that which it is only on its way to become. There remains, therefore, as the only possible alternative, that it is that which it is to be in possibility, but not as yet in actuality. If, for example, an uneducated man becomes an educated man, he does so out of the condition of a man not educated, but as truly out of the condition of a man capable of education. In fact, it is not the uneducated, as such, that becomes educated, but it is the uneducated *man*—the subject, that is, which has a predisposition towards education, but in actuality is not yet educated.

All Becoming is a passing over of possibility into actuality. Becoming, in general, therefore, presupposes a substratum whose essence it is to be pure possibility, which has not in any relation become actuality.[2] All

[1] Cf. pp. 302, 309 sqq.

[2] This relation is fully developed in *Phys.* i. 6–10, from which the following are extracts: c. 7: *φαμὲν γὰρ γίνεσθαι ἐξ ἄλλου ἄλλο καὶ ἐξ ἑτέρου ἕτερον ἢ τὰ ἁπλᾶ λέγοντες ἢ συγκείμενα* [the former, if I say 'the man becomes cultured,' or 'the uncultured becomes cultured'; the latter, if I say 'the uncultured man becomes a cultured man']. *τῶν δὲ γινομ-*

becomes that which it comes to be out of its opposite. What becomes warm must before have been cold. He who becomes a man of knowledge must before have been without knowledge.[1] Opposites as such, however, can-

ἑνων ὡς τὰ ἁπλᾶ λέγομεν γίνεσθαι, τὸ μὲν ὑπομένον λέγομεν γίνεσθαι, τὸ δ' οὐχ ὑπομένον. ὁ μὲν γὰρ ἄνθρωπος ὑπομένει μουσικὸς γινόμενος ἄνθρωπος καὶ ἔστι, τὸ δὲ μὴ μουσικὸν καὶ τὸ ἄμουσον οὔτε ἁπλῶς οὔτε συντιθέμενον ὑπομένει. διωρισμένων δὲ τούτων ἐξ ἁπάντων τῶν γιγνομένων τοῦτο ἔστι λαβεῖν ἐάν τις ἐπιβλέψῃ, ὥσπερ λέγομεν, ὅτι δεῖ τι ἀεὶ ὑποκεῖσθαι τὸ γινόμενον, καὶ τοῦτο εἰ καὶ ἀριθμῷ ἐστιν ἕν, ἀλλ' εἴδει γε οὐχ ἕν . . . οὐ γὰρ ταὐτὸν τὸ ἀνθρώπῳ καὶ τὸ ἀμούσῳ εἶναι. καὶ τὸ μὲν ὑπομένει, τὸ δ' οὐχ ὑπομένει· τὸ μὲν μὴ ἀντικείμενον ὑπομένει (ὁ γὰρ ἄνθρωπος ὑπομένει) τὸ μουσικὸν δὲ καὶ τὸ ἄμουσον οὐχ ὑπομένει. *Ibid.* 190, a, 31: in the case of all else that becomes the οὐσία is the substratum of the change; ὅτι δὲ καὶ αἱ οὐσίαι καὶ ὅσα ἄλλα ἁπλῶς ὄντα ἐξ ὑποκειμένου τινὸς γίνεται, ἐπισκοποῦντι γένοιτ' ἂν φανερόν. This he goes on to prove by the examples of plants, animals, products of art and chemical changes (ἀλλοίωσεις), and then proceeds: ὥστε δῆλον ἐκ τῶν εἰρημένων, ὅτι τὸ γινόμενον ἅπαν ἀεὶ συνθετόν ἐστι, καὶ ἔστι μέν τι γινόμενον, ἔστι δέ τι ὃ τοῦτο γίνεται, καὶ τοῦτο διττόν· ἢ γὰρ τὸ ὑποκείμενον ἢ τὸ ἀντικείμενον. λέγω δὲ ἀντικεῖσθαι μὲν τὸ ἄμουσον, ὑποκεῖσθαι δὲ τὸν ἄνθρωπον, καὶ τὴν μὲν ἀσχημοσύνην καὶ τὴν ἀμορφίαν ἢ τὴν ἀταξίαν τὸ ἀντικείμενον, τὸν δὲ χαλκὸν ἢ τὸν λίθον ἢ τὸν χρυσὸν τὸ ὑποκείμενον. φανερὸν οὖν . . . ὅτι γίγνεται πᾶν ἔκ τε τοῦ ὑποκειμένου καὶ τῆς μορφῆς . . . ἔστι δὲ τὸ ὑποκείμενον ἀριθμῷ μὲν ἕν, εἴδει δὲ δυό, viz. (1) matter as such and (2) the negation of form (στέρησις) as property (συμβεβηκὸς) of matter. It is just this distinction, c. 8 goes on, which solves the difficulty previous philosophers felt in dealing with the possibility of becoming which they ended by totally denying: οὔτε γὰρ τὸ ὂν γίνεσθαι (εἶναι γὰρ ἤδη) ἔκ τε μὴ ὄντος οὐδὲν ἂν γενέσθαι . . . ἡμεῖς δὲ καὶ αὐτοί φαμεν γίγνεσθαι μὲν οὐδὲν ἁπλῶς ἐκ μὴ ὄντος, ὅμως μέντοι γίγνεσθαι ἐκ μὴ ὄντος, οἷον κατὰ συμβεβηκός· ἐκ γὰρ τῆς στερήσεως, ὅ ἐστι καθ' αὑτὸ μὴ ὄν, οὐκ ἐνυπάρχοντος γίγνεταί τι [*i.e.* a thing becomes what it is not from its negative which in and for itself does not exist: man, for example, becomes what he is not—cultured from being uncultured] . . . εἷς μὲν δὴ τρόπος οὗτος, ἄλλος δ' ὅτι ἐνδέχεται ταὐτὰ λέγειν κατὰ τὴν δύναμιν καὶ τὴν ἐνέργειαν. *Gen. et Corr.* i. 3, 317, b, 15: τρόπον μέν τινα ἐκ μὴ ὄντος ἁπλῶς γίνεται, τρόπον δὲ ἄλλον ἐξ ὄντος ἀεί. τὸ γὰρ δυνάμει ὂν ἐντελεχείᾳ δὲ μὴ ὂν ἀνάγκη προϋπάρχειν λεγόμενον ἀμφοτέρως. Cf. *Metaph.* xii. 2 (an exposition in complete agreement with that of the *Physics*); *ibid.* c. 4, 1070, b, 11, 18, c. 5, 1071, b, 8, iv. 5, 1009, a, 30 and p. 341, n. 2, *supra*.

[1] See *infra*, and *Phys.* ii. 5, 205, a, 6.

not change into their opposites, nor even act upon their opposites. Cold does not become warmth: ignorance does not become knowledge; but the former cease when the latter begin. Becoming is not the passing over of one property into the opposite property, but the passage out of one condition into the opposite condition, by the interchange of one property with another. Thus it follows that all Becoming presupposes some Being on the basis of which such an interchange takes place, and which underlies as their subject the changing properties and conditions, and maintains itself in them. This substratum certainly is in a sense the opposite of that which it is to become, but it is so not in itself, but derivatively. It has not as yet those properties which it is to receive, and in place of them it has their opposites; and in so far it stands in a negative relation to that which is to come out of it. This negative relation, however, concerns not its own essence, but only the determinations of quality which attach to it.[1] As

[1] Cf. besides the above nn. and p. 323 sq., *Phys.* i. 6, 189, a, 20: for the explanation of phenomena it is not enough to assume two principles standing to one another in the relation of opposites, ἀπορήσειε γὰρ ἄν τις πῶς ἡ ἡ πυκνότης τὴν μανότητα ποιεῖν τι πέφυκεν ἢ αὕτη τὴν πυκνότητα. ὁμοίως δὲ καὶ ἄλλη ὁποιαοῦν ἐναντιότης, &c; c. 7, 190, b, 29: διὸ ἔστι μὲν ὡς δύο λεκτέον εἶναι τὰς ἀρχὰς, ἔστι δ' ὡς τρεῖς. καὶ ἔστι μὲν ὡς τἀναντία, οἷον εἴ τις λέγοι τὸ μουσικὸν καὶ τὸ ἄμουσον ἢ τὸ θερμὸν καὶ τὸ ψυχρὸν ἢ τὸ ἡρμοσμένον καὶ τὸ ἀνάρμοστον ἔστι δ' ὡς οὔ· ὑπ' ἀλλήλων γὰρ πάσχειν τἀναντία ἀδύνατον. We obtain three principles (ἀρχαὶ) (*ibid.* 191, a, 12) if besides ὑποκείμενον and λόγος we take especial account of στέρησις, otherwise only two. A thing's opposite is its principle in so far as its matter is infected with στέρησις or the contrary of the form it is going to receive; something other than its opposite is its principle in so far as the matter in itself is as capable of the one determination as of the other; c. 9, 192, a, 16: Plato errs in identifying the material simply with the non-existent. ὄντος γάρ τινος θείου καὶ ἀγαθοῦ καὶ ἐφετοῦ, τὸ μὲν ἐναντίον αὐτῷ φαμὲν εἶναι,

it is a presupposition of all Becoming, this substratum cannot ever itself have had a commencement; and since everything which perishes resolves itself finally into the same substratum, it is imperishable also.[1] This beginningless basis of Becoming[2] is Matter;[3] and so we have Matter alongside of Form as a second term.[4]

The notion and the relation of these two principles is more accurately determined in the doctrine that Form is the Actual and Matter the Possible.[5] Both

τὸ δὲ ὃ πέφυκεν ἐφίεσθαι καὶ ὀρέγεσθαι αὐτοῦ κατὰ τὴν ἑαυτοῦ φύσιν. τοῖς δὲ συμβαίνει τὸ ἐναντίον ὀρέγεσθαι τῆς ἑαυτοῦ φθορᾶς. καίτοι οὔτε αὐτὸ ἑαυτοῦ οἷόν τε ἐφίεσθαι τὸ εἶδος διὰ τὸ μὴ εἶναι ἐνδεές, οὔτε τὸ ἐναντίον. φθαρτικὰ γὰρ ἀλλήλων τὰ ἐναντία. ἀλλὰ τοῦτ' ἔστιν ἡ ὕλη, ὥσπερ ἂν εἰ θῆλυ ἄρρενος καὶ αἰσχρὸν καλοῦ (see p. 325, n. 1, *supra*). *Phys.* iv. 9, 217, a, 22: ἐστὶν ὕλη μία τῶν ἐναντίων, θερμοῦ καὶ ψυχροῦ καὶ τῶν ἄλλων τῶν φυσικῶν ἐναντιώσεων, καὶ ἐκ δυνάμει ὄντος ἐνεργείᾳ ὂν γίνεται, καὶ οὐ χωριστὴ μὲν [sc. τῶν ἐναντιώσεων] ἡ ὕλη, τῷ δ' εἶναι ἑτέρον.

[1] See p. 341, n. 2, *supra*. *Phys.* i. 9, 192, a, 28: ἄφθαρτον καὶ ἀγέννητον ἀνάγκη αὐτὴν εἶναι. εἴτε γὰρ ἐγίγνετο, ὑπόκεισθαί τι δεῖ πρῶτον, τὸ ἐξ οὗ ἐνυπάρχοντος . . . εἴτε φθείρεται, εἰς τοῦτο ἀφίξεται ἔσχατον.

[2] Τὸ ὑποκείμενον, τὸ δεκτικόν, p. 342, n. 2, besides following notes and *Gen. et Corr.* i. 10, 328, b, 10: θάτερον μὲν δεκτικὸν θάτερον δ' εἶδος. *De An.* ii. 2, 414, a, 9: μορφή καὶ εἶδός τι καὶ λόγος καὶ οἷον ἐνέργεια τοῦ δεκτικοῦ. *Ibid.* l. 13: ὥστε λόγος τις ἂν εἴη [ἡ ψυχὴ] καὶ εἶδος, ἀλλ' οὐχ ὕλη καὶ τὸ ὑποκείμενον.

[3] *Phys. ibid.* l. 31: λέγω γὰρ ὕλην τὸ πρῶτον ὑποκείμενον ἑκάστῳ, ἐξ οὗ γίνεταί τι ἐνυπάρχοντος μὴ κατὰ συμβεβηκός. *Gen. et Corr.* i. 4 *fin.*: ἔστι δὲ ὕλη μάλιστα μὲν καὶ κυρίως τὸ ὑποκείμενον γενέσεως καὶ φθορᾶς δεκτικόν, τρόπον δέ τινα καὶ τὸ ταῖς ἄλλαις μεταβολαῖς *Metaph.* i. 3, 983, a, 29: ἑτέραν δὲ [αἰτίαν φαμὲν εἶναι] τὴν ὕλην καὶ τὸ ὑποκείμενον. Cf. foregoing nn.

[4] Cf. the foregoing and the next n. As στέρησις constitutes of itself no independent principle, but merely belongs to matter as such, *i.e.* to matter as still formless, it is assigned a place beside form and matter only in a very few passages and with a certain reservation; see *Phys.* i. 7 (p. 344, n. 1); *Metaph.* xii. 2, 1069, b, 32, c. 4, 1070, b, 10, 18, c. 5, 1071, a, 6, 16.

[5] *De An.* ii. 1, 412, a, 6: λέγομεν γένος ἕν τι τῶν ὄντων τὴν οὐσίαν, ταύτης δὲ τὸ μὲν ὡς ὕλην, ὃ καθ' αὑτὸ μὲν οὐκ ἔστι τόδε τι, ἕτερον δὲ μορφὴν καὶ εἶδος, καθ' ἣν ἤδη λέγεται τόδε τι καὶ τρίτον τὸ ἐκ τούτων. ἔστι δ' ἡ μὲν ὕλη δύναμις, τὸ δ' εἶδος ἐντελέχεια. So c. 2, 414, a, 14 sq.; *Gen. et Corr.* ii. 9, 335, a, 32: ὡς μὲν οὖν ὕλη τοῖς γεννητοῖς ἐστιν αἴτιον τὸ δυνα-

conceptions have been obtained entirely out of the consideration of the distinction between the two poles

τὸν εἶναι καὶ μὴ εἶναι. *Metaph.* vii. 7, 1032, a, 20: ἅπαντα δὲ τὰ γιγνόμενα ἢ φύσει ἢ τέχνῃ ἔχει ὕλην. δυνατὸν γὰρ καὶ εἶναι καὶ μὴ εἶναι ἕκαστον αὐτῶν, τοῦτο δ' [that which can be or not be] ἐστὶν ἐν ἑκάστῳ ὕλη; c. 15 (*v. supra*); viii. 1, 1042, a, 27: ὕλην δὲ λέγω ἣ μὴ τόδε τι οὖσα ἐνεργείᾳ δυνάμει ἐστὶ τόδε τι; c. 2, 1042, b, 9: ἐπεὶ δ' ἡ μὲν ὡς ὑποκειμένη καὶ ὡς ὕλη οὐσία ὁμολογεῖται, αὕτη δ' ἐστὶν ἡ δυνάμει. *Ibid.* 1043, a, 12: ἡ ἐνέργεια ἄλλη ἄλλης ὕλης καὶ ὁ λόγος; l. 20: τοῦ εἴδους καὶ τῆς ἐνεργείας; l. 27: ἡ μὲν γὰρ ὡς ὕλη [οὐσία ἐστὶν] ἡ δ' ὡς μορφὴ ὅτι ἐνέργεια; c. 3 *init.*: τὴν ἐνέργειαν καὶ τὴν μορφὴν . . . τῆς ἐνεργείας καὶ τοῦ εἴδους; c. 6, 1045, a, 23: εἰ δ' ἐστὶν . . . τὸ μὲν ὕλη τὸ δὲ μορφὴ, καὶ τὸ μὲν δυνάμει τὸ δὲ ἐνεργείᾳ; ix. 8, 1050, a, 15: ἡ ὕλη ἐστὶ δυνάμει, ὅτι ἔλθοι ἂν εἰς τὸ εἶδος· ὅταν δέ γ' ἐνεργείᾳ ᾖ, τότε ἐν τῷ εἴδει ἐστίν; b, 2, 27: ἡ οὐσία καὶ τὸ εἶδος ἐνέργειά ἐστιν . . . ἡ οὐσία [τῶν φθαρτῶν] ὕλη καὶ δύναμις οὖσα, οὐκ ἐνέργεια; xii. 5, 1071, a, 8: ἐνεργείᾳ μὲν γὰρ τὸ εἶδος . . . δυνάμει δὲ ἡ ὕλη; l. 18: πάντων δὴ πρῶται ἀρχαὶ τὸ ἐνεργείᾳ πρῶτον, τὸ εἴδει, καὶ ἄλλο ὃ δυνάμει. Such passages could easily be multiplied to prove that τὸ δυνάμει ὂν corresponds precisely to ὕλη, τὸ ἐνεργείᾳ ὂν to εἶδος. Even the statement (BONITZ, *Arist. Metaph.* ii. 398) that ὕλη refers rather to πρώτη, δυνάμει ὂν rather to ἐσχάτη ὕλη (see p. 348, n. 1, *infra*), does not seem correct. If to the question πότε δυνάμει ἐστὶν ἕκαστον; Aristotle (*Metaph.* ix. 7) replies by means of the ἐσχάτη ὕλη, he must make the same reply to the question as to the ὕλη ἑκάστου, the matter of these determinate things. If the earth cannot be said to be δυνάμει ἄνθρωπος, neither can it be called according to *Metaph.* viii. 4, 1044, a, 35, b, 1 sq., 'the matter of man'; and what the same passage calls δυνάμει οἰκία, 1049, b, 8 sq. designates ὕλη. On the other hand, πρώτη ὕλη is simply δυνάμει ὄν. So far, therefore, as there remains any distinction between the two pairs of conceptions, it concerns not so much their actual content as the point of view from which we regard it. In the antithesis of form and matter we distinguish between different elements, in that of ἐνεργείᾳ and δυνάμει between different states or conditions of things. The former refers to the relation of substance to attribute; the latter, to the relation of the earlier to the later condition, of the incomplete to the complete. But since the very essence of matter consists in possibility of form in actuality, we can conceive no case in which more than a grammatical change is necessary in order that we may substitute the latter for the former expressions. And *vice versa* we may in most cases substitute matter and form for the possible and the actual. The only difficulty that can possibly arise is in the case where we are speaking, not of two things related to one another as the possible to the actual, but of one and the same

between which all Change and Becoming moves.[1] If we abstract in any given case from all that a given object is about for the first time to become, we shall have a definite Matter which is in want of a definite Form, and is conseqnently as yet only capable of receiving it. If we abstract entirely from anything which is a product of Becoming—that is to say, if we think to ourselves a kind of object which has not as yet become anything, then we shall have pure Matter without any determination by Form. This will be that which is nothing, but can become everything—the Subject, namely, or substratum to which no one of all the thinkable predicates belongs, but which precisely on that account is equally receptive of them all. In other words, it is that which is all in Possibility and nothing in Actuality: it is purely potential Being,[2]

thing as it passes from possibility to actuality, cf. *Phys.* ii. 3, 195, b, 3, viii. 4, 255, a, 33; *De An.* ii. 5, 417, a, 21 sq.; *Gen. An.* ii. 1, 735, a, 9; but even here it can always be shown that a thing is δυνάμει only in so far as it has the ὕλη in itself. Although, therefore, δυνάμει and ἐνεργείᾳ have, logically considered, a wider range than ὕλη and εἶδος (since, while the latter express only a relation of two subjects to one another, the former express also a relation of one subject to itself), metaphysically there is no distinction between them.

[1] That Aristotle's conception of matter and with it the distinction between matter and form thus originated in the attempt to explain 'becoming,' which seemed to presuppose it, is clear also from the statement that nothing to which 'becoming' is inapplicable can be said to have a matter; *Metaph.* viii. 5, 1044, b, 27: οὐδὲ παντὸς ὕλη ἐστὶν ἀλλ' ὅσων γένεσίς ἐστι καὶ μεταβολὴ εἰς ἄλληλα. ὅσα δ' ἄνευ τοῦ μεταβάλλειν ἔστιν ἢ μὴ, οὐκ ἔστι τούτων ὕλη. Cf. vii. 7 (previous n.)

[2] Τὸ δυνάμει ὄν. A somewhat different meaning attaches to δύναμις when it indicates power or faculty in the sense of the ἀρχὴ μεταβλητικὴ, whether we speak of a faculty for doing or for suffering, a rational or an irrational power (cf. *Metaph.* ix. 1–6, v. 12); Aristotle, however, again mixes up both significations (cf. BONITZ on *Metaph.* 379 sq., and p. 234, n. 1, *supra*).

without any kind of actual existence.[1] If conversely we take an object and abstract from it everything that is merely rudimentary and only on its way to completion, if we think of the end of its growth as fully attained, we obtain the pure and complete realisation of its conception, to which nothing formless, no matter that is still unformed, any longer attaches. The Form, or intelligible essence of a thing, corresponds with its perfect realisation, and Form in general with Actuality.[2] Just as a statue is contained only potentially in the unwrought material, and comes into actual existence only through the Form which the artist communicates to the material, Aristotle under-

From this second meaning of δύναμις we have Aristotle's application of it to the material in which a determinate power resides, as in *Part. An.* ii. 1, 646, a, 14 sq., where moist and dry, warm and cold substances, *Gen. An.* i. 18, 725, b, 14, where certain liquids, *Meteor.* ii. 3, 359, b, 12, where salts and alkalis, *De Sensu*, 5, 444, a, 1, where fragrant scents are called δυνάμεις.

[1] This pure matter, which, however (see *infra*), is never present as such, Aristotle calls πρώτη ὕλη. Its opposite in this sense is ὕλη ἐσχάτη (ἴδιος, οἰκεία ἑκάστου), or the matter which unites itself, immediately, without requiring further preparation, with a determinate form. Πρώτη ὕλη is the material as it precedes all elementary differences; the ἐσχάτη ὕλη, *e.g.*, of the statue is the stone or brass; the ἐσχάτη ὕλη of man is τὰ καταμήνια. *Metaph.* v. 4, 1015, a, 7, c. 24 *init.*, viii. 6, 1045, b, 17, c. 4, 1044, a, 15, 34, b. 1, ix. 7, 1049, a, 24. Some verbal confusion is caused by the fact that the expression πρώτη ὕλη is applied equally to matter which is absolutely, and to matter which is only relatively, first (to the ὅλως πρώτη and to the πρὸς αὐτὸ πρώτη ὕλη); see *Metaph.* v. 4, viii. 4, 1044, a, 18, 23; *Phys.* ii. 1, 193, a, 28, and cf. *Metaph.* v. 4, 1014, b, 26. Cf. BONITZ, *Ind. Arist.*, 786, b, 10.

[2] Ἐνέργεια or ἐντελέχεια (in the concrete τὸ ἐνεργείᾳ ὄν, τὸ ἐντελεχείᾳ ὄν), expressions which properly differ as activity or actualisation differs from completeness or actuality, but which are commonly used by Aristotle without distinction. Cf. *infra*, p. 379 sq.

stands by Potentiality in general Being as mere susceptibility—indeterminate, undeveloped self-existence, capable, indeed, of becoming a definite reality, but not yet made into one. By Actuality, on the other hand, he means the same being considered as a developed totality or Being which has wrought out all that it contains into full existence. When accordingly he identifies Form with actual, Matter with potential, being, he means to say that the former is the totality of the qualities which the latter does not possess but is capable of acquiring.[1] Matter as such, the so-called πρώτη ὕλη,[2] is without form or definite character, being just that which precedes all Becoming and all formation; the centre of indifference to all opposites and definite qualities; the substratum which as yet possesses none of the qualities that make the Form of things.[3]

[1] *Metaph.* ix. 6, 1048, a. 30: ἔστι δ' ἡ ἐνέργεια τὸ ὑπάρχειν τὸ πρᾶγμα μὴ οὕτως ὥσπερ λέγομεν δυνάμει. λέγομεν δὲ δυνάμει οἷον ἐν τῷ ξύλῳ Ἑρμῆν καὶ ἐν τῇ ὅλῃ τὴν ἡμίσειαν, ὅτι ἀφαιρεθείη ἄν, καὶ ἐπιστήμονα καὶ τὸν μὴ θεωροῦντα, ἂν δυνατὸς ᾖ θεωρῆσαι. τὸ δ' ἐνεργείᾳ. δῆλον δ' ἐπὶ τῶν καθέκαστα τῇ ἐπαγωγῇ ὃ βουλόμεθα λέγειν, καὶ οὐ δεῖ παντὸς ὅρον ζητεῖν, ἀλλὰ καὶ τὸ ἀνάλογον συνορᾶν, ὅτι ὡς τὸ οἰκοδομοῦν πρὸς τὸ οἰκοδομικὸν, καὶ τὸ ἐγρηγορὸς πρὸς τὸ καθεῦδον, καὶ τὸ ὁρῶν πρὸς τὸ μύον μὲν ὄψιν δὲ ἔχον, καὶ τὸ ἀποκεκριμένον ἐκ τῆς ὕλης πρὸς τὴν ὕλην, καὶ τὸ ἀπειργασμένον πρὸς τὸ ἀνέργαστον. ταύτης δὲ τῆς διαφορᾶς θάτερον μόριον ἔστω ἡ ἐνέργεια ἀφωρισμένη, θατέρῳ δὲ τὸ δυνατόν; c. 8, 1050, a, 21; *Phys.* i. 7, 191, a, 7: ἡ δ' ὑποκειμένη φύσις ἐπιστητὴ κατ' ἀναλογίαν. ὡς γὰρ πρὸς ἀνδριάντα χαλκὸς ἢ πρὸς κλίνην ξύλον ἢ πρὸς τῶν ἄλλων τι τῶν ἐχόντων μορφὴν ἡ ὕλη καὶ τὸ ἄμορφον ἔχει πρὶν λαβεῖν τὴν μορφὴν, οὕτως αὕτη πρὸς οὐσίαν ἔχει καὶ τὸ τόδε τι καὶ τὸ ὄν. *Ibid.* iii. 1, 201, a, 29.

[2] See p. 348, n. 1, *supra*

[3] *Metaph* vii 3, 1029, a, 20: λέγω δ' ὕλην ἣ καθ' αὑτὴν μήτε τὶ μήτε ποσὸν μήτε ἄλλο μηθὲν λέγεται οἷς ὥρισται τὸ ὄν; c. 11, 1037, a, 27: μετὰ μὲν γὰρ τῆς ὕλης οὐκ ἔστιν [λόγος], ἀόριστον γάρ; ix. 7, 1049, a, 24: εἰ δέ τί ἐστι πρῶτον, ὃ μηκέτι κατ' ἄλλου λέγεται ἐκείνινον [of such and such a nature], τοῦτο πρώτη ὕλη; viii. 1, see p. 345, n. 5, *supra*, iv. 4, 1007, b, 28: τὸ γὰρ δυνάμει ὂν καὶ μὴ ἐντελεχείᾳ τὸ ἀόριστόν ἐστι. *Phys.* i. 7; see above, n. 1, and iv. 2, 209, b, 9: passing from this it becomes

Considered in this aspect, it is also unlimited or infinite, not in the spatial sense (for Aristotle, as we shall see, does not admit the existence of infinity in space), but in the wider sense according to which the infinite is that which, as fixed and circumscribed by no determinate Form, has reached no conclusion or completion.[1] And since what is wholly indeterminate cannot be known, Matter, as such, is unknowable. It is only by analogy that we can gain any conception of it, by supposing a substratum for things of sense in general which is related to them in much the same way as a special material is to the things that are made out of it.[2] To Form, on the other hand, we attribute all the qualities of things, all definiteness, limitation, and intelligibility. Form

περιεχόμενον ὑπὸ τοῦ εἴδους [the form] καὶ ὡρισμένον . . . ἔστι δὲ τοιοῦτον ἡ ὕλη καὶ τὸ ἀόριστον. *De Cœlo*, iii. 8, 306, b, 17: ἀειδὲς καὶ ἄμορφον δεῖ τὸ ὑποκείμενον εἶναι μάλιστα γὰρ ἂν οὕτω δύναιτο ῥυθμίζεσθαι, καθάπερ ἐν τῷ Τιμαίῳ γέγραπται, τὸ πανδεχές.

[1] By ἄπειρον Aristotle understands, first of all, the unlimited in space, and in this sense he examines the conception in *Phys.* iii. 4 sq. But finding that in actuality there is no such infinite space, he finally identifies the unlimited with the ἀόριστον or ὕλη. Cf. *ibid.* c. 6, 207, a, 1: the notion commonly entertained of infinity is wholly false, οὐ γὰρ οὗ μηδὲν ἔξω, ἀλλ' οὗ ἀεί τι ἔξω ἐστὶ, τοῦτ' ἄπειρόν ἐστιν . . . ἄπειρον μὲν οὖν ἐστὶν οὗ κατὰ ποσὸν λαμβάνουσιν ἀεί τι λαβεῖν ἔστιν ἔξω. οὗ δὲ μηδὲν ἔξω, τοῦτ' ἐστὶ τέλειον καὶ ὅλον (*De Cœlo*, ii. 4, 286, b, 19, repeated) . . . τέλειον δ' οὐδὲν μὴ ἔχον τέλος· τὸ δὲ τέλος πέρας . . . οὐ γὰρ λίνον λίνῳ συνάπτειν ἐστὶ τῷ ἅπαντι καὶ ὅλῳ τὸ ἄπειρον . . . ἔστι γὰρ τὸ ἄπειρον τῆς τοῦ μεγέθους τελειότητος ὕλη καὶ τὸ δυνάμει ὅλον, ἐντελεχείᾳ δ' οὔ . . . καὶ οὐ περιέχει ἀλλὰ περιέχεται, ᾗ ἄπειρον. διὸ καὶ ἄγνωστον ᾗ ἄπειρον· εἶδος γὰρ οὐκ ἔχει ἡ ὕλη . . . ἄτοπον δὲ καὶ ἀδύνατον, τὸ ἄγνωστον καὶ τὸ ἀόριστον περιέχειν καὶ ὁρίζειν; c. 7, 207, b, 35: φανερὸν ὅτι ὡς ὕλη τὸ ἄπειρόν ἐστιν αἴτιον, καὶ ὅτι τὸ μὲν εἶναι αὐτῷ στέρησις, τὸ δὲ καθ' αὑτὸ ὑποκείμενον τὸ συνεχὲς καὶ αἰσθητόν. iv. 2, see previous note.

[2] *Phys.* iii. 6; see previous note; *ibid.* i. 7, *Metaph.* ix. 6; see p. 349, n. 1, *supra*, *Metaph.* vii. 10, 1036, a, 8: ἡ δ' ὕλη ἄγνωστος καθ' αὑτήν. Cf. also p. 220, n. 2, *supra*; for parallels from Plato, cf. ZELLER, *Ph. d. Gr.* pt. i. p. 621, 2.

and Matter, therefore, require nothing further to mediate between them in order to produce a whole, but are immediately united: Form is the definiteness of Matter in itself indefinite; Matter receives into itself directly the lacking definiteness of Form. When the Potential passes into the Actual, these elements do not stand opposed to one another as two separate things, but one and the same thing looked at as Matter is the Potentiality of that of which the Actuality is its Form.[1]

But just as we may not regard Form and Matter in their mutual relation as two heterogeneous substances, so neither may we regard either of them in any case as a single substance, so as to imply that one Matter and one Form constitute the fundamental elements which in various combinations produce the aggregate of things. Aristotle recognises, indeed, in the Divine Spirit a being which is pure Form without Matter. Yet he does not treat this as the intelligible idea of all Forms, the universal, spiritual substance of all things, but as an individual being, beside which all other individual beings exist as so many substances. In like manner Aristotle recognises a fundamental matter, which, while in the elements and generally in all particular kinds of matter it assumes different forms and qualities, yet is in itself one and the same in all bodies. Yet this primitive

[1] *Metaph.* viii. 6, 1045, b, 17: to the question how the elements of a conception or of a number can be one, Aristotle answers that they are related to one another as matter and form (see p. 220, n. 2, *supra*): ἔστι δ' ὥσπερ εἴρηται καὶ ἡ ἐσχάτη ὕλη [cf. p. 348, n. 1] καὶ ἡ μορφὴ ταὐτὸ καὶ ἓν τὸ μὲν δυνάμει τὸ δὲ ἐνεργείᾳ. [So BONITZ reads, but BEKKER has: ταὐτὸ καὶ δυνάμει τὸ ἕν.] ἓν γάρ τι ἕκαστον καὶ τὸ δυνάμει καὶ τὸ ἐνεργείᾳ ἕν πώς ἐστιν.

matter is never present except in the definite form of one of the elements.[1] Nor can it be otherwise, since pure, indeterminate Matter is mere Potentiality without any Actuality whatsoever. This original corporeal Matter, moreover, does not exhaust the conception, and Aristotle goes on to speak also of an incorporeal Matter which he finds, for example, in conceptions and in mathematical figures. To this belongs whatever, without being itself corporeal, stands to something else in the same relation as corporeal Matter stands to Form.[2] Hence we see that not only does each of these conceptions denote a single existence or definite class of things, but they are used, though undoubtedly obtained in the first instance by abstraction from corporeal things,[3] wheresoever a relation subsists analogous to that which they originally express.[4] Thus in analysing conceptions into their

[1] *Phys.* iii. 5, 204, b, 32: *οὐκ ἔστι τοιοῦτον σῶμα αἰσθητὸν παρὰ τὰ στοιχεῖα καλούμενα*, otherwise the four elements must needs resolve themselves into this, which is not the case. *Gen. et Corr.* ii. 1, 329, a, 8. *Ibid.* l. 24: *ἡμεῖς δὲ φαμὲν μὲν εἶναί τινα ὕλην τῶν σωμάτων τῶν αἰσθητῶν, ἀλλὰ ταύτην οὐ χωριστὴν, ἀλλ' ἀεὶ μετ' ἐναντιώσεως. ἐξ ἧς γίνεται τὰ καλούμενα στοιχεῖα.* *Ibid.* i. 5, 320, b, 12 sq.

[2] *Metaph.* viii. 6, 1045, a, 33: *ἔστι δὲ τῆς ὕλης ἡ μὲν νοητὴ ἡ δ' αἰσθητὴ, καὶ ἀεὶ τοῦ λόγου τὸ μὲν ὕλη τὸ δ' ἐνέργειά ἐστιν*; vii. 11, 1036, b, 35: *ἔσται γὰρ ὕλη ἐνίων καὶ μὴ αἰσθητῶν· καὶ παντὸς γὰρ ὕλη τίς ἐστιν ὃ μή ἐστι τί ἦν εἶναι καὶ εἶδος αὐτὸ καθ' αὑτὸ ἀλλὰ τόδε τι . . . ἔστι γὰρ ἡ ὕλη ἡ μὲν αἰσθητὴ ἡ δὲ νοητή.* *Ibid.* c. 10, 1036, a, 9: *ὕλη δ' ἡ μὲν αἰσθητή ἐστιν ἡ δὲ νοητὴ . . . νοητὴ δὲ ἡ ἐν τοῖς αἰσθητοῖς ὑπάρχουσα μὴ ᾗ αἰσθητά, οἷον τὰ μαθηματικά.*

[3] This is evident from the examples which Aristotle uses in illustration; cf. pp. 341, n. 2, 342, n. 2, and 345 n. 5, *sup.* Of matter he remarks also in *Gen. et Corr.* i. 4, 320, a, 2, that we are to understand by it *μάλιστα καὶ κυρίως τὸ ὑποκείμενον γενέσεως καὶ φθορᾶς δεκτικόν.*

[4] *Metaph.* xii. 4: *τὰ δ' αἴτια καὶ αἱ ἀρχαὶ ἄλλα ἄλλων ἔστιν ὥς, ἔστι δ' ὡς ἂν καθόλου λέγῃ τις καὶ κατ' ἀναλογίαν, ταὐτὰ πάντων . . . οἷον ἴσως τῶν αἰσθητῶν σωμάτων ὡς μὲν εἶδος τὸ θερμὸν καὶ ἄλλον τρόπον τὸ ψυχρὸν ἡ στέρησις, ὕλη δὲ τὸ δυνάμει ταῦτα πρῶτον καθ' αὑτό . . . πάντων δὲ οὕτω μὲν εἰπεῖν*

two elements, Aristotle attributes to the genus the same significance as Matter, while he identifies the specific difference with the Form.[1] Similarly in the scheme of the universe, in physiology, in zoology, in psychology, the upper and the lower spheres and elements,[2] the soul and the body,[3] the male and the female,[4] the Active and the Passive Reason,[5] stand to one another in the same relation as the Form and the Matter. The same is true, it need hardly be remarked, of Potentiality and Actuality. These also express a definite relation which may subsist between all possible kinds of objects, and which can best be explained by analogy.[6] Aristotle applies them in precisely the same way as Matter and Form. He uses them, for instance, to elucidate the connection between the genus and the specific differences, and in general to show the possibility of several properties belonging to one and the same thing.[7] By them he explains the relation between the passive and the active

*οὐκ ἔστιν, τῷ ἀνάλογον δὲ, ὥσπερ εἴ τις εἴποι ὅτι ἀρχαί εἰσι τρεῖς, τὸ εἶδος καὶ ἡ στέρησις καὶ ἡ ὕλη. ἀλλ' ἕκαστον τούτων ἕτερον περὶ ἕκαστον γένος ἐστίν*; c. 5, 1071, a, 3: *ἔτι δ' ἄλλον τρόπον τῷ ἀνάλογον ἀρχαὶ αἱ αὐταί, οἷον ἐνέργεια καὶ δύναμις. ἀλλὰ καὶ ταῦτα ἄλλα τε ἄλλοις καὶ ἄλλως.* L. 24: *ἄλλα δὲ ἄλλων αἴτια καὶ στοιχεῖα, ὥσπερ ἐλέχθη, τῶν μὴ ἐν ταὐτῷ γένει, χρωμάτων, ψόφων, οὐσιῶν, ποσότητος, πλὴν τῷ ἀνάλογον· καὶ τῶν ἐν ταὐτῷ γένει ἕτερα, οὐκ εἴδει, ἀλλ' ὅτι τῶν καθ' ἕκαστον ἄλλο ἥ τε σὴ ὕλη καὶ τὸ κινῆσαν καὶ τὸ εἶδος καὶ ἡ ἐμὲ, τῷ καθόλου δὲ λόγῳ ταὐτά.*

[1] See p. 219, n. 2, *supra*.

[2] *De Cælo*, iv. 3, 4, 310, b, 14, 312, a, 12, *Gen. et Corr.* i. 3, 318, b, 32, ii. 8, 335, a, 18.

[3] *De An.* ii. 1, 412, b, 9 sq. c. 2, 414, a, 13 sq. and often.

[4] *Gen. An.* i. 2 *init.*, ii. 1, 732, a, 3, ii. 4, 738, b, 20, and often. *Metaph.* i. 6, 988, a, 5, v. 28, 1024, a, 34.

[5] *De An.* iii. 5.

[6] *Metaph.* ix. 6; see p. 349, n. 1, *supra*. *Ibid.* 1048, b, 6: *λέγεται δ' ἐνεργείᾳ οὐ πάντα ὁμοίως, ἀλλ' ἢ τὸ ἀνάλογον, ὡς τοῦτο ἐν τούτῳ ἢ πρὸς τοῦτο, τὸ δ' ἐν τῷδε ἢ πρὸς τόδε· τὰ μὲν γὰρ ὡς κίνησις πρὸς δύναμιν, τὰ δ' ὡς οὐσία πρός τινα ὕλην.* Cf. xii. 5, 1071, a, 3, cited p. 352, n. 4.

[7] *De An.* iii. 5.

understanding.[1] It follows that one and the same thing may be viewed in one aspect as Matter, in another as Form: as Potentiality in the first, as Actuality in the second. The elements, for instance, which contain the material of all other bodies, are Forms of the primitive Matter; the brass which supplies the material for a statue has its own peculiar Form as a specific metal. While the soul in general is viewed as the Form of the body, yet even in its own highest and most immaterial part a distinction is made between two elements which are related to one another as Form and Matter.[2] Indeed, we shall find that everything except the 'eternal immaterial substances' contains some element of Matter,[3] while on the other hand, as we already know,[4] Matter never actually presents itself to us except as endowed with Form.

We may therefore distinguish several stages[5] in the development of Matter into Form. The first purely formless Matter lies at the foundation of all things: but it is also true that everything has its own peculiar and ultimate Matter. Between these two lie all the material formations through which the original Matter has to pass before it becomes the particular Matter with which the Form of the thing immediately unites itself.[6] The same holds true of the δύναμις.[7] We ascribe potential knowledge

[1] *Metaph.* viii. 6, 1045, a, 23, b, 16. *Phys.* i. 2 *fin.*; see p. 219, n. 2, p. 351, n. 1, p. 301, n. 3 and 4, *supra*.

[2] Cf. *Gen. et Corr.* ii. 1, 329, a, 32; *Phys.* iii. 1, 201, a, 29; *De An.* p. 375 sq., 440.

[3] Cf. p. 352, n. 2.

[4] See p. 352, n 1, *supra*, and compare p. 348, n. 1.

[5] Cf. the passages quoted p. 348, n. 1, *e.g. Metaph.* viii. 4, 1044, a, 20: γίγνονται δὲ πλείους ὕλαι τοῦ αὐτοῦ, ὅταν θατέρου ἡ ἑτέρα ᾖ, οἷον φλέγμα ἐκ λιπαροῦ καὶ γλυκέος, εἰ τὸ λιπαρὸν ἐκ τοῦ γλυκέος, ἐκ δὲ χολῆς τῷ ἀναλύεσθαι εἰς τὴν πρώτην ὕλην τὴν χολήν.

[6] See p. 351, n. 1.

[7] *Phys.* viii. 4, 255, a, 33; *De An.* ii. 5, 417, a, 21 sq.

not only to the man of learning when he is conceived as not actually engaged in scientific activity, but also to the learner, and even to man in general. But the sense in each case varies, and we have to distinguish between the degrees of proximity to ἐνέργεια.[1] Nothing attains the realisation of that which it had at first the mere capacity to be, except by degrees; and in the universe at large there are an infinite number of intermediate stages between mere Potentiality or the first Matter, and complete Actuality, which is pure Form or God.

Now in the phenomenal world, Form presents itself under the aspect of a threefold principle of causality, while Matter contains the ground of all impressibility and of all incompleteness, of natural necessity and chance.

Aristotle is in the habit of enumerating four kinds of Cause [2]—the material, the conceptual or formal, the efficient and the final.[3] These, however, on closer

[1] *Gen. An.* ii. 1, 735, a, 9: ἐγγυτέρω δὲ καὶ πορρωτέρω αὐτὸ αὐτοῦ ἐνδέχεται εἶναι δυνάμει, ὥσπερ ὁ καθεύδων γεωμέτρης τοῦ ἐγρηγορότος πορρωτέρω καὶ οὗτος τοῦ θεωροῦντος.

[2] Ἀρχαί. On the meaning of this expression see *Metaph.* v. 1, with the comments of SCHWEGLER and BONITZ, and also xi. 1 *fin.*, *Gen. et Corr.* i. 7, 324, a, 27, *Phys.* i. 5, 188, a, 27, viii. 1 *fin.*, *Gen. An.* v. 7, 788, a, 14; also *Poet.* c. 7, 1450, b, 27; WAITZ, *Arist. Org* i. 457 sq., the *Ind. Arist.* under ἀρχὴ, and p. 247, n, 2, *supra*. Ἀρχὴ indicates the first in every series, and in this sense it is used for all kinds of causes, but more especially of first causes, *i.e.* such as are deducible from no higher. Cf. *Metaph.* v. 1, 1013, a, 17: πασῶν μὲν οὖν κοινὸν τῶν ἀρχῶν τὸ πρῶτον εἶναι ὅθεν ἢ ἔστιν ἢ γίγνεται ἢ γιγνώσκεται· τούτων δὲ αἱ μὲν ἐνυπάρχουσαί εἰσιν αἱ δὲ ἐκτός. *Anal. Post.* i. 2, 72, a, 6; *Top.* iv. 1, 121, b, 9.

[3] *Phys.* ii. 3, 194, b, 23: ἕνα μὲν οὖν τρόπον αἴτιον λέγεται τὸ ἐξ οὗ γίνεταί τι ἐνυπάρχοντος, οἷον χαλκὸς τοῦ ἀνδριάντος, &c. ἄλλον δὲ τὸ εἶδος καὶ τὸ παράδειγμα· τοῦτο δ' ἐστὶν ὁ λόγος ὁ τοῦ τί ἦν εἶναι καὶ τὰ τούτου γένη [*i.e.* the classes above it] . . . ἔτι ὅθεν ἡ ἀρχὴ τῆς μεταβολῆς ἡ πρώτη ἢ τῆς ἠρεμήσεως . . . ἔτι ὡς τὸ τέλος· τοῦτο δ' ἐστὶ τὸ οὗ ἕνεκα (= *Metaph.* v. 2); 195, a, 15: one class of causes is ὡς τὸ ἐξ οὗ αἴτια, and of these τὰ μὲν ὡς τὸ ὑποκείμενον, τὰ δὲ ὡς τὸ

inspection, are found to be resolvable into the two first mentioned. The concept of a thing is not different from its end, since to realise an end is to actualise a concept. But it is likewise possible to identify the concept with the efficient cause, whether it sets the thing in motion from within as its soul, or whether the motion comes from without. Even in the latter case it is the conception of the thing which produces motion, alike in works of nature and of art. Only man can beget man. Only the conception of health can determine the physician to labour in producing health.[1] In like

τί ἦν εἶναι; next we have causes ὅθεν ἡ ἀρχὴ τῆς μεταβολῆς ἢ στάσεως καὶ κινήσεως; lastly τὸ τέλος καὶ τἀγαθόν. *Metaph.* i. 3 *init.*: τὰ δ' αἴτια λέγεται τετραχῶς, ὧν μίαν μὲν αἰτίαν φαμὲν εἶναι τὴν οὐσίαν καὶ τὸ τί ἦν εἶναι . . . ἑτέραν δὲ τὴν ὕλην καὶ τὸ ὑποκείμενον, τρίτην δὲ ὅθεν ἡ ἀρχὴ τῆς κινήσεως, τετάρτην δὲ ἀντικειμένην αἰτίαν ταύτῃ, τὸ οὗ ἕνεκα καὶ τἀγαθόν. *Ibid.* viii. 4, 1044, a, 32, *Anal. Post.* ii. 11 *init.*, *De Somno*, 2, 455, b, 14, *Gen. An.* i. 1 *init*, v. 1, 778, b, 7, and elsewhere; cf. *Ind. Arist.* 22, b, 29. On the different terms used for the four causes, *ibid.* and WAITZ, *Arist. Org.* ii. 407; on what follows, RITTER, iii. 166 sqq. The further modifications of the doctrine of the four causes in *Phys.* ii. 3, 195, a, 26 sq. (cf. *Metaph.* v. 2, 1013, b, 28), are unimportant, as is also the distinction of the οὗ ἕνεκα into person and thing, on which cf. *De An.* ii. 4, 415, b, 2: τὸ δ' οὗ ἕνεκα διττόν, τὸ μὲν οὗ τὸ δὲ ᾧ. See also *Phys.* ii. 2, 194, a, 35, and *Metaph.* xii. 7, 1072, b, 2 (where we must read ἔστι γάρ τινι τὸ οὗ ἕνεκα καὶ τινός—the end is in the one case to heal the *sick*, and in the other to establish *health*).

[1] *Phys.* ii. 7, 198, a, 24: ἔρχεται δὲ τὰ τρία εἰς τὸ ἓν πολλάκις· τὸ μὲν γὰρ τί ἐστι καὶ τὸ οὗ ἕνεκα ἕν ἐστι [cf. 198, b, 3], τὸ δ' ὅθεν ἡ κίνησις πρῶτον τῷ εἴδει ταὐτὸ τούτοις· ἄνθρωπος γὰρ ἄνθρωπον γεννᾷ. Cf. i. 7, 190, b, 17 sq. *De An.* ii. 4, 415, b, 7: ἔστι δὲ ἡ ψυχὴ τοῦ ζῶντος σώματος αἰτία καὶ ἀρχή. ταῦτα δὲ πολλαχῶς λέγεται. ὁμοίως δ' ἡ ψυχὴ κατὰ τοὺς διωρισμένους τρόπους τρεῖς αἰτία· καὶ γὰρ ὅθεν ἡ κίνησις αὐτή, καὶ οὗ ἕνεκα, καὶ ὡς ἡ οὐσία τῶν ἐμψύχων σωμάτων ἡ ψυχὴ αἰτία, which he goes on to prove more fully. *Metaph.* xii. 5, 1071, a, 18: πάντων δὴ πρῶται ἀρχαὶ τὸ ἐνεργείᾳ πρῶτον, τὸ εἴδει, καὶ ἄλλο ὃ δυνάμει. Elsewhere now one and now another of these three causes is identified with the third. So *Metaph.* viii. 4, 1044, b, 1: ἴσως δὲ ταῦτα (i.e. εἶδος and τέλος) ἄμφω τὸ αὐτό. *Gen. An.* i. 1 *init.*: ὑπόκεινται γὰρ αἰτίαι τέτταρες, τό τε οὗ ἕνεκα ὡς τέλος, καὶ ὁ λόγος τῆς οὐσίας· ταῦτα μὲν

manner we shall in the highest cause, which is God, find the pure Form, the ultimate end of the world and the source of its movement united in one. Nor does Aristotle in his physics distinguish more than two kinds

*οὖν ὡς ἕν τι σχεδὸν ὑπολαβεῖν δεῖ, τρίτον δὲ καὶ τέταρτον ἡ ὕλη καὶ ὅθεν ἡ ἀρχὴ τῆς κινήσεως. Ibid.* ii. 1, 732, a 3, where the female is called the *ὕλη*, the male the *αἰτία κινοῦσα πρώτη, ᾗ ὁ λόγος ὑπάρχει καὶ τὸ εἶδος*, and c. 6, 742, a, 28; where, as in i. 1, the formal and the final cause are identified, and only three principles are enumerated: the *τέλος* or *οὗ ἕνεκα*, the *ἀρχὴ κινητικὴ καὶ γεννητικὴ* and the *χρήσιμον ᾧ χρῆται τὸ τέλος. Part. An.* i. 1, 641, a, 25: *τῆς φύσεως διχῶς λεγομένης καὶ οὔσης τῆς μὲν ὡς ὕλης τῆς δ' ὡς οὐσίας* [which = *εἶδος*]· *καὶ ἔστιν αὕτη καὶ ὡς ἡ κινοῦσα καὶ ὡς τὸ τέλος. Phys.* ii. 8, 199, a, 30: *καὶ ἐπεὶ ἡ φύσις διττὴ ἡ μὲν ὡς ὕλη ἡ δ' ὡς μορφὴ, τέλος δ' αὕτη . . . αὕτη ἂν εἴη ἡ αἰτία ἡ οὗ ἕνεκα. Ibid.* c. 9, 200, a, 14: *τὸ δ' οὗ ἕνεκα ἐν τῷ λόγῳ.* L. 34: *τὸ τέλος τὸ οὗ ἕνεκα καὶ ἡ ἀρχὴ ἀπὸ τοῦ ὁρισμοῦ καὶ τοῦ λόγου.* The artist's method is nature's also: *ἐπεὶ ἡ οἰκία τοιάνδε, τάδε δεῖ γίγνεσθαι . . . οὕτως καὶ εἰ ἄνθρωπος τοδὶ, ταδί. Part. An.* i. 1, 639, b, 14: *φαίνεται δὲ πρώτη* [*αἰτία*] *ἣν λέγομεν ἕνεκά τινος· λόγος γὰρ οὗτος. De An.* i. 1, 403, b, 6: *τὸ εἶδος, ἕνεκα τωνδί. Gen. et Corr.* ii. 9, 335, b, 5: *ὡς μὲν ὕλη τοῦτ' ἐστιν αἴτιον τοῖς γεννητοῖς, ὡς δὲ τὸ οὗ ἕνεκεν ἡ μορφὴ καὶ τὸ εἶδος· τοῦτο δ' ἐστὶν ὁ λόγος ὁ τῆς ἑκάστου οὐσίας*, and previously: *εἰσὶν οὖν* [*αἱ ἀρχαὶ τῆς γενέσεως*] *καὶ τὸν ἀριθμὸν ἴσαι καὶ τῷ γένει αἱ αὐταὶ αἵπερ ἐν τοῖς ἀϊδίοις τε καὶ πρώτοις· ἡ μὲν γάρ ἐστιν ὡς ὕλη, ἡ δ' ὡς μορφή· δεῖ δὲ καὶ τὴν τρίτην ἔτι προσυπάρχειν. Metaph.* xii. 3, see p. 341, n. 1, *fin. Metaph.* vii. 7 *init.*: *πάντα τὰ γιγνόμενα ὑπό τέ τινος γίγνεται καὶ ἔκ τινος καὶ τί.* Of the *ὑφ' οὗ* it is said further on: *καὶ ὑφ' οὗ, ἡ κατὰ τὸ εἶδος λεγομένη φύσις ἡ ὁμοειδὴς* [sc. *τῷ γιγνομένῳ*]· *αὕτη δ' ἐν ἄλλῳ. ἄνθρωπος γὰρ ἄνθρωπον γεννᾷ*, and further, 1032, b, 11: *ὥστε συμβαίνει τρόπον τινὰ ἐξ ὑγιείας τὴν ὑγίειαν γίνεσθαι, καὶ τὴν οἰκίαν ἐξ οἰκίας, τῆς ἄνευ ὕλης τὴν ἔχουσαν ὕλην· ἡ γὰρ ἰατρική ἐστι καὶ ἡ οἰκοδομικὴ τὸ εἶδος τῆς ὑγιείας καὶ τῆς οἰκίας· λέγω δ' οὐσίαν ἄνευ ὕλης τὸ τί ἦν εἶναι.* (Cf. *Gen. An.* ii. 4, 740, b, 28: *ἡ δὲ τέχνη μορφὴ τῶν γινομένων ἐν ἄλλῳ. Part. An.* i. 1, 640, a, 31: *ἡ δὲ τέχνη λόγος τοῦ ἔργου ὁ ἄνευ τῆς ὕλης ἐστίν*; so in *Gen. et Corr.* ii. 9, 335, b, 33, 35, *μορφή* corresponds to *τέχνη*; the art, however, is elsewhere treated as the true efficient cause, the artist only as a secondary cause; e.g. *Gen. et Corr.* i. 7, 324, a, 34.) *Metaph.* xii. 4 *fin.*: *ἐπεὶ δὲ τὸ κινοῦν ἐν μὲν τοῖς φυσικοῖς ἀνθρώποις* (read *ἀνθρώπῳ*, approved by SCHWEGLER and BONITZ) *ἄνθρωπος, ἐν δὲ τοῖς ἀπὸ διανοίας τὸ εἶδος ἢ τὸ ἐναντίον, τρόπον τινὰ τρία αἴτια ἂν εἴη, ὡδὶ δὲ τέτταρα· ὑγίεια γάρ πως ἡ ἰατρικὴ, καὶ οἰκίας εἶδος ἡ οἰκοδομικὴ, καὶ ἄνθρωπος ἄνθρωπον γεννᾷ*; c. 3 *fin.*: *ἡ γὰρ ἰατρικὴ τέχνη ὁ λόγος τῆς ὑγιείας ἐστίν.* Speaking of health again,

of Cause, necessary and final,[1] in the operation of Matter and that of Form or concept.[2] This is the only distinction, therefore, which we must regard as fundamental; that between formal, efficient and final causes is merely a secondary subdivision. For though the three are not always combined in the individual,[3] yet in themselves and in their essence they are one, and it is only in the phenomena of sense that they are found separate.[4] The created universe has several causes; the eternal has only one—the essential concept itself.[5]

Again, as the Form is at once the efficient and the final force, so Matter as formless and indeterminate[6]

it is said in *Gen. et Corr.* i. 7, 324, b, 15, that as the *οὗ ἕνεκα* it is not *ποιητικόν*.

[1] For a fuller discussion on this, see pp. 349, &c. *supra*. At this point, it will be enough to refer the reader to *Part. An.* i. 1. Cf. p. 642, a, 1: *εἰσὶν ἄρα δύο αἰτίαι αὗται, τό θ' οὗ ἕνεκα καὶ τὸ ἐξ ἀνάγκης*. The opposition is indicated in l. 17 in the words: *ἀρχὴ γὰρ ἡ φύσις μᾶλλον τῆς ὕλης*, with which cf. further the passages quoted in the foregoing note from *Phys.* ii. 8, and *Part. An.* i. 1.

[2] For although in *Gen. An.* v. 1, 778, a, 34, the moving cause is classed along with the necessary and efficient, yet as RITTER, appealing to *Phys.* ii. 9, 200, a, 30, rightly remarks, the moving cause is not here considered by itself, but only as united with matter. Cf. also *ibid.* l. 14: *ἐν γὰρ τῇ ὕλῃ τὸ ἀναγκαῖον, τὸ δ' οὗ ἕνεκα ἐν τῷ λόγῳ*.

[3] So that, as is remarked *Phys.* ii. 3, 195, a, 8, of two things each may be the cause of the other, but in a different sense; physical exercise, *e.g.*, may be the efficient cause of health, health the final cause of exercise. This is the meaning of *πολλάκις* in *Phys.* ii. 7 (p. 356, n. 1).

[4] Cf. *Metaph.* ix. 8, 1049, b, 17: *τῷ δὲ χρόνῳ πρότερον* [sc. *ἐνέργεια δυνάμεως*] *ὧδε· τὸ τῷ εἴδει τὸ αὐτὸ ἐνεργοῦν πρότερον* [*i.e.* every potentiality presupposes a similar actuality], *ἀριθμῷ δ' οὔ*—for, as this is explained, the seed indeed precedes the plant which springs from it, but this seed itself comes from another plant, so that it is still the plant that produces the plant. *Ibid.* vii. 9, 1034, b, 16: *ἴδιον τῆς οὐσίας . . . ὅτι ἀνάγκη προϋπάρχειν ἑτέραν οὐσίαν ἐντελεχείᾳ οὖσαν ἣ ποιεῖ, οἷον ζῷον, εἰ γίγνεται ζῷον*.

[5] *Gen. An.* ii. 6, 742, b, 33: *ἀρχὴ δ' ἐν μὲν τοῖς ἀκινήτοις τὸ τί ἐστιν, ἐν δὲ τοῖς γινομένοις ἤδη πλείους, τρόπον δ' ἄλλον καὶ οὐ πᾶσαι τὸν αὐτόν· ὧν μία τὸν ἀριθμὸν, ὅθεν ἡ κίνησίς ἐστιν*.

[6] See p. 318 sq. *supra*.

is at once the passive subject of all impressions and the cause of all blind operations unregulated by any purpose. Matter alone can receive impressions, for all *πάθος* is a process of determination, and nothing is susceptible of such a process but that which is not yet determined: nothing, that is, but the indeterminate and therefore determinable—in other words, nothing but Matter, which can exhibit every activity and every quality, for the simple reason that, taken in itself, it has no quality or operative force.[1] But though Matter is wholly devoid of any such active and positive force, Aristotle nevertheless attributes to it every obstruction to the plastic energy exercised by Form. To what other source, indeed, could this be traced? And so, since Form always works with a purpose, it is in Matter that we must seek the ground of all phenomena that are independent of this final purpose and antagonistic to it, the principle of blind natural necessity and chance. The first of these obstructive forces is to be explained by Nature's need of certain materials and the consequent dependence of her creatures upon the same. Though this material element is in no sense efficient cause, yet it is an indispensable condition of the realisation of Nature's ends. Though it is not necessary in itself, it is so conditionally: for if a certain particular being has to be pro-

[1] *Gen. et Corr.* i. 7, 324, b, 4: ὅσα μὲν οὖν μὴ ἐν ὕλῃ ἔχει τὴν μορφὴν, ταῦτα μὲν ἀπαθῆ τῶν ποιητικῶν, ὅσα δ' ἐν ὕλῃ, παθητικά. τὴν μὲν γὰρ ὕλην λέγομεν ὁμοίως ὡς εἰπεῖν τὴν αὐτὴν εἶναι τῶν ἀντικειμένων ὁποτερουοῦν, ὥσπερ γένος ὄν. *ibid.* l. 18: ἡ δ' ὕλη ᾗ ὕλη παθητικόν; ii. 9, 335, b, 29: τῆς μὲν γὰρ ὕλης τὸ πάσχειν ἐστὶ καὶ τὸ κινεῖσθαι, τὸ δὲ κινεῖν καὶ ποιεῖν ἑτέρας δυνάμεως. Of Matter as moved and Form as mover we shall have more to say immediately. How exclusively passivity was limited by Aristotle to Matter, appears especially in his anthropology.

duced certain particular materials must be ready to hand.[1] For the same reason, the extent to which Nature

[1] Plato had already sharply distinguished the *αἴτια* from the *συναίτια*, the efficient causes (*δι' ὧν γίγνεταί τι*) from the indispensable conditions (*ἄνευ ὧν οὐ γίγνεται*); cf. *Div.* i. 642 sqq. Aristotle also adopts this distinction. His whole view of nature turns on the opposition between design and natural necessity, between what is required by the conception or form of a thing and what proceeds from the nature of its material: the former is the *δι' ὅ*, the latter the *οὗ οὐκ ἄνευ*; the former is independent and unconditioned, the latter is for a purpose and conditionally necessary. To these two there is added a third kind of necessity, viz. compulsion, which, however, does not further concern us here (upon this as distinguished from the necessity of the conception, cf. *Phys.* viii. 4, 254, b, 13; *An. Post.* ii. 11, 94, b, 37; *Metaph.* v. 5, 1015, a, 26 sqq., vi. 2, 1026, b, 27, xi. 8, 1064, b, 33). Cf. *Metaph.* xii. 7, 1072, b, 11: *τὸ γὰρ ἀναγκαῖον τοσαυταχῶς, τὸ μὲν βίᾳ ὅτι παρὰ τὴν ὁρμήν, τὸ δὲ οὗ οὐκ ἄνευ τὸ εὖ, τὸ δὲ μὴ ἐνδεχόμενον ἄλλως ἀλλ' ἁπλῶς.* *Part. An.* i. 1, 639, b, 21: *τὸ δ' ἐξ ἀνάγκης οὐ πᾶσιν ὑπάρχει τοῖς κατὰ φύσιν ὁμοίως . . . . ὑπάρχει δὲ τὸ μὲν ἁπλῶς τοῖς ἀϊδίοις, τὸ δ' ἐξ ὑποθέσεως καὶ τοῖς ἐν γενέσει πᾶσιν.* *Ibid.* 642, a, 1: *εἰσὶν ἄρα δύο αἰτίαι αὗται, τό θ' οὗ ἕνεκα καὶ τὸ ἐξ ἀνάγκης· πολλὰ γὰρ γίνεται ὅτι ἀνάγκη. ἴσως δ' ἄν τις ἀπορήσειε ποίαν λέγουσιν ἀνάγκην οἱ λέγοντες ἐξ ἀνάγκης· τῶν μὲν γὰρ δύο τρόπων οὐδέτερον οἷόν τε ὑπάρχειν, τῶν διωρισμένων ἐν τοῖς κατὰ φιλοσοφίαν* [the necessity imposed by the conception and that of compulsion]. *ἔστι δ' ἔν γε τοῖς ἔχουσι γένεσιν ἡ τρίτη. λέγομεν γὰρ τὴν τροφὴν ἀναγκαῖόν τι κατ' οὐδέτερον τούτων τῶν τρόπων, ἀλλ' ὅτι οὐχ οἷόν τε ἄνευ ταύτης εἶναι. τοῦτο δ' ἐστὶν ὥσπερ ἐξ ὑποθέσεως.* *Gen. An.* i. 4, 717, a, 15: *πᾶν ἡ φύσις ἢ διὰ τὸ ἀναγκαῖον ποιεῖ ἢ διὰ τὸ βέλτιον*; ii. 6, 743, b, 16: *πάντα δὲ ταῦτα, καθάπερ εἴπομεν* (743, a, 36), *λεκτέον γίνεσθαι τῇ μὲν ἐξ ἀνάγκης, τῇ δ' οὐκ ἐξ ἀνάγκης ἀλλ' ἕνεκά τινος*; iv. 8, 776, b, 32: *δι' ἀμφοτέρας τὰς αἰτίας, ἕνεκά τε τοῦ βελτίστου καὶ ἐξ ἀνάγκης.* *Phys.* ii. 2 *init.*: *τὸ δ' ἐξ ἀνάγκης πότερον ἐξ ὑποθέσεως ὑπάρχει ἢ καὶ ἁπλῶς;* usually we look for the necessity in the nature of the material parts; *ἀλλ' ὅμως οὐκ ἄνευ μὲν τούτων γέγονεν, οἱ μέντοι διὰ ταῦτα πλὴν ὡς δι' ὕλην . . . ὁμοίως δὲ καὶ ἐν τοῖς ἄλλοις πᾶσιν, ἐν ὅσοις τὸ ἕνεκά του ἐστὶν, οὐκ ἄνευ μὲν τῶν ἀναγκαίαν ἐχόντων τὴν φύσιν, οὐ μέντοι γε διὰ ταῦτα ἀλλ' ἢ ὡς ὕλην . . . ἐξ ὑποθέσεως δὴ τὸ ἀναγκαῖον, ἀλλ' οὐχ ὡς τέλος· ἐν γὰρ τῇ ὕλῃ τὸ ἀναγκαῖον, τὸ δ' οὗ ἕνεκα ἐν τῷ λόγῳ.* L. 30: *φανερὸν δὴ ὅτι τὸ ἀναγκαῖον ἐν τοῖς φυσικοῖς τὸ ὡς ὕλη λεγόμενον καὶ αἱ κινήσεις αἱ ταύτης.* *De An.* ii. 4, 416, a, 9: *δοκεῖ δέ τισιν ἡ τοῦ πυρὸς φύσις ἁπλῶς αἰτία τῆς τροφῆς καὶ τῆς αὐξήσεως εἶναι . . . τὸ δὲ συναίτιον μέν πώς ἐστιν, οὐ μὴν ἁπλῶς γε αἴτιον, ἀλλὰ μᾶλλον ἡ ψυχή.* *Gen. et Corr.* ii. 9, 335, b, 24 sq.: it is not the matter which is the producing cause, for it is merely passive and moved; the *κυριωτέρα*

can realise her end—the mode and the perfection in which the Form manifests itself—are conditioned by the character of these materials: that is, by their capacity for receiving and exhibiting the Form. Just in proportion as this capacity is wanting, will the formations be imperfect and degenerate from their true patterns and the proper purposes of nature, or perhaps we shall have productions which serve no end at all, but are developed incidentally as the result of some natural coherence and necessity, in the course of the realisation of Nature's purposes.[1]

αἰτία is τί ἦν εἶναι and the μορφή. The physical is the mere tool of the causative conception; heat does not any more of itself effect production than the saw saws of itself. *Part. An.* iii. 2, 663, b, 22: πῶς δὲ τῆς ἀναγκαίας φύσεως ἐχούσης τοῖς ὑπάρχουσιν ἐξ ἀνάγκης ἡ κατὰ τὸν λόγον φύσις ἕνεκά του κατακέχρηται, λέγωμεν. Similarly Aristotle distinguishes (*Anal. Post.* ii. 11, 94, b, 27) ἕνεκά τινος and ἐξ ἀνάγκης and enumerates (*Metaph.* v. 5) the commoner applications of ἀναγκαῖον: to that οὗ ἄνευ οὐκ ἐνδέχεται ζῆν, &c.; ὡς συναιτίου, to that which is βίαιον and to that which is ἀναγκαῖον in the proper sense τὸ ἁπλοῦν (= ἁπλῶς ἀναγκαῖον) viz. the μὴ ἐνδεχόμενον ἄλλως ἔχειν. Quite in conformity with this is the statement of Eudemus *apud* SIMPL. *Phys.* 63, a, that matter and aim are the two causes of motion. Within the sphere of conditional necessity there is again (*Gen. An.* ii. 6, 742, a, 19 sq.; where, however, l. 22, we must read, not οὗ ἕνεκα but with Cod. PS. and Wimmer τούτου ἕν.) a twofold distinction made between that which as efficient cause conditions the production of anything and that which is necessary to it as the instrument of its activity: the former must precede in origin the thing which it aims at producing; the latter must follow it. Cf. on the whole subject WAITZ, *Arist. Org.* ii. 409 sq.

[1] *Part. An.* iv. 2, 677, a, 15: καταχρῆται μὲν οὖν ἐνίοτε ἡ φύσις εἰς τὸ ὠφέλιμον τοῖς περιττώμασιν, οὐ μὴν διὰ τοῦτο δεῖ ζητεῖν πάντα ἕνεκα τίνος, ἀλλά τινων ὄντων τοιούτων ἕτερα ἐξ ἀνάγκης συμβαίνει διὰ ταῦτα πολλά. So according to *Gen. An.* v. 1, 778, a, 30, only that has an end to serve which appears universally in all nature's productions or in certain classes of them; individual varieties on the other hand have none: the eye has an end to serve; the fact that it is blue has none: *ibid.* c. 8 *fin.*, mention is made of phenomena ὅσα γίνεσθαι συμβαίνει μὴ ἕνεκά του ἀλλ' ἐξ ἀνάγκης καὶ διὰ τὴν αἰτίαν τὴν κινητικήν. According to *Metaph.* viii. 4, 1044, b, 12, the eclipses of the moon appear to serve no end; ὕει ὁ Ζεὺς οὐχ ὅπως τὸν σῖτον αὐξήσῃ, ἀλλ' ἐξ ἀνάγκης· τὸ γὰρ ἀναχθὲν ψυχθῆναι δεῖ καὶ τὸ ψυχθὲν ὕδωρ

We shall hereafter have occasion to observe how deeply this view is rooted in Aristotle's whole theory of Nature, and how many phenomena he accounts for by the resistance of Matter to Form. Again the same property of Matter is also the source of all contingency in Nature.[1] By 'the contingent,'[2] Aristotle, who was the first carefully to examine this conception,[3] understands in general all that can equally well belong or not belong to a thing: that which is neither contained in its essence nor supported by the necessity of its being,[4] and which accordingly is neither necessary nor normal.[5] That we must assume the existence of

γενόμενον κατελθεῖν· τὸ δ' αὐξάνεσθαι τούτου γενομένου τὸν σῖτον συμβαίνει. ὁμοίως δὲ καὶ εἴ τῳ ἀπόλλυται ὁ σῖτος ἐν τῇ ἅλῳ, οὐ τούτου ἕνεκα ὗει ὅπως ἀπόληται, ἀλλὰ τοῦτο συμβέβηκεν (*Phys.* ii. 8, 198, b, 18); individual organs of animals are without purpose: the bile is a περίττωμα καὶ οὐχ ἕνεκά τινος (*Part. An.* ibid. l. 13), the stag has no use for its antlers (*ibid.* iii. 2, 663, a, 6, 664, a, 7). The same is true of all superfluous materials which are unemployed; such materials are ἄχρηστον or even τῶν παρὰ φύσιν τι (*Gen. An.* i. 18, 725, a, 1, 4); we must therefore decide even in reference to one and the same material whether it serves a purpose or not: lymph (ἰχὼρ), *e.g.*, which consists partly of half-assimilated and partly of corrupted blood, is in the former aspect αἵματος χάριν, in the latter ἐξ ἀνάγκης (*Part. An.* ii. 4 *fin.*). Necessity of this latter kind, as is indicated in the passage quoted above from *Phys.* ii. 8, coincides with contingency.

[1] Whether also of all freedom of choice in man, from which alone contingent effects really spring (to it alone at least these are referred in *De Interpr.* c. 9, 18, b, 31, 19, a, 7), Aristotle does not tell us. In *Phys.* i. 5, 196, b, 17, sq., he expressly excludes free purpose, as such, from the domain of τύχη.

[2] Συμβεβηκὸς in the narrower sense, τὸ ἀπὸ τύχης.

[3] As he says himself, *Phys.* ii. 4.

[4] *An. Post.* i. 4, 73, a, 34, b, 10: Aristotle calls καθ' αὑτὰ, ὅσα ὑπάρχει τε ἐν τῷ τί ἐστιν . . . καὶ ὅσοις τῶν ἐνυπαρχόντων αὐτοῖς αὐτὰ ἐν τῷ λόγῳ ἐνυπάρχουσι τῷ τί ἐστι δηλοῦντι . . . ὅσα δὲ μηδετέρως ὑπάρχει, συμβεβηκότα; further, τὸ μὲν δι' αὐτὸ ὑπάρχον ἑκάστῳ καθ' αὑτὸ, τὸ δὲ μὴ δι' αὑτὸ συμβεβηκός. *Top.* i. 5, 102, b, 4: συμβεβηκὸς δέ ἐστιν . . . ὃ ἐνδέχεται ὑπάρχειν ὁτῳοῦν ἑνὶ καὶ τῷ αὐτῷ καὶ μὴ ὑπάρχειν; cf. p. 234, n. 1, on ἐνδεχόμενον and δυνατὸν, p. 213, n. 4, p. 214, n. 3, on συμβεβηκός.

[5] *Metaph.* v. 30, *init.*: συμβεβηκὸς λέγεται ὃ ὑπάρχει μέν τινι

such a principle, and not ascribe everything to the operation of necessity, Aristotle proves in the first place by the witness of universal experience,[1] and in particular by the fact of the Freedom of the Will.[2] But he finds the true rationale of all contingency in the fact that all finite existence contains the potentiality of being and not-being, and that Matter as the indeterminate renders opposite determinations possible.[3] It follows from this property of Matter that many things happen independently of the final action of efficient causes. The latter have always a definite object in view, but they frequently fail of its perfect accomplishment[4] owing to the indeterminate nature of the Matter which they use, while at other times, owing to the same disturbing cause, they incidentally produce results which they did not originally design.[5] A contingent or accidental event is

καὶ ἀληθὲς εἰπεῖν οὐ μέντοι οὔτ' ἐξ ἀνάγκης οὔτ' ἐπὶ τὸ πολύ. The same definition is given vi. 2, 1026 b, 31 sqq. (xi. 8). *Phys.* ii. 5 *init.*; *De Cœlo*, i. 12, 283, a, 32: τὸ μὲν γὰρ αὐτόματόν ἐστι καὶ τὸ ἀπὸ τύχης παρὰ τὸ ἀεὶ καὶ τὸ ὡς ἐπὶ τὸ πολὺ ἢ ὂν ἢ γινόμενον. *Phys.* ii. 8, 138, b, 34: might not the appearance of design in nature be explained by supposing that of her chance productions only those survive which are fitted to live? No: ταῦτα μὲν γὰρ καὶ πάντα τὰ φύσει ἢ ἀεὶ οὕτω γίνεται ἢ ὡς ἐπὶ τὸ πολύ, τῶν δ' ἀπὸ τύχης καὶ τοῦ αὐτομάτου οὐδέν. So *De Cœlo*, ii. 8, 289, b, 26.

[1] *Phys. ibid.* 196, b, 13.

[2] *De Interpr.* c. 9, 18, b, 31, 19, a, 7.

[3] *De Interpr.* c. 9, 19, a, 9: there must be contingency, ὅτι ὅλως ἔστιν ἐν τοῖς μὴ ἀεὶ ἐνεργοῦσι τὸ δυνατὸν εἶναι, καὶ μὴ ὁμοίως. *Metaph.* vi. 2, 1027, a, 13: ὥστε ἡ ὕλη ἔσται αἰτία, ἡ ἐνδεχομένη παρὰ τὸ ὡς ἐπὶ τὸ πολὺ ἄλλως, τοῦ συμβεβηκότος; vii. 7 (see p. 345, n. 5, *supra*), v. 30, 1025, a, 24: οὐδὲ δὴ αἴτιον ὡρισμένον οὐθὲν τοῦ συμβεβηκότος, ἀλλὰ τὸ τυχόν, τοῦτο δ' ἀόριστον. Cf. n. 5 *infra*.

[4] See pp. 360 sqq. *supra*, *Gen. An.* iv. 10, 778, a, 4: βούλεται μὲν οὖν ἡ φύσις τοῖς τούτων [τῶν ἄστρων] ἀριθμοῖς ἀριθμεῖν τὰς γενέσεις καὶ τὰς τελευτάς, οὐκ ἀκριβοῖ δὲ διά τε τὴν τῆς ὕλης ἀοριστίαν καὶ διὰ τὸ γίνεσθαι πολλὰς ἀρχάς, αἳ τὰς γενέσεις τὰς κατὰ φύσιν καὶ τὰς φθορὰς ἐμποδίζουσαι πολλάκις αἴτιαι τῶν παρὰ φύσιν συμπιπτόντων εἰσίν. See further p. 341 sqq.

[5] See n. 3, *supra*. *Phys.* ii.

caused by the diversion of free or compulsory purposeful action to results alien from its purpose through the influence of external circumstances.[1] Now, since these disturbing circumstances are always found in the nature of the material means by which ends are realised, and in the system of nature to which these means belong, Contingency, in Aristotle's sense of the word, may be defined as the disturbance by intermediate causes of an activity directed to a purpose.[2] But activity in obedience to a purpose is that by which the essence or conception of an object is realised.[3] That which does not proceed from it is unessential; and there-

5, 196, b, 17: τῶν δὲ γινομένων τὰ μὲν ἕνεκά του γίγνεται, τὰ δ' οὔ . . . ἔστι δ' ἕνεκά του ὅσα τε ἀπὸ διανοίας ἂν πραχθείη καὶ ὅσα ἀπὸ φύσεως. τὰ δὴ τοιαῦτα ὅταν κατὰ συμβεβηκὸς γένηται, ἀπὸ τύχης φαμὲν εἶναι . . . τὸ μὲν οὖν καθ' αὑτὸ αἴτιον ὡρισμένον, τὸ δὲ κατὰ συμβεβηκὸς ἀόριστον· ἄπειρα γὰρ ἂν τῷ ἑνὶ συμβαίη. It is chance, for instance, if one comes to a place for another purpose and is rewarded in a way he had not thought of; or if he (*Metaph.* v. 30) digs a hole and finds a treasure; or if he desires to sail to one place and is carried to another; or, generally, if from action directed to a definite end something else results, by reason of the intervention of external circumstances, than that which was intended (ὅταν μὴ τοῦ συμβάντος ἕνεκα γένηται, οὗ ἔξω τὸ αἴτιον, *Phys.* ii. 6, 197, b, 19). If the action is one of voluntary choice (προαιρετὸν) such a chance (according to the passage just quoted from *Phys.* ii.) must be called τύχη, otherwise αὐτόματον, so that the latter is the wider conception. Both, however, stand equally opposed to purposed action; ὥστ' ἐπειδὴ ἀόριστα τὰ οὕτως αἴτια, καὶ ἡ τύχη ἀόριστον (*Phys.* ii. 5, 197, a, 20).

[1] Akin to this, but unimportant for our present investigation, is the coincidence in time of two circumstances between which no causal relation of any kind exists, *e.g.* a walk and an eclipse of the moon. Such a coincidence (which is the purest and simplest case of contingency) Aristotle calls σύμπτωμα, *Divin. p. S.* i. 462, b, 26 sqq.

[2] See p. 356 sqq. *supra.*

[3] *Metaph.* vi. 2, 1026, b, 13: ὥσπερ γὰρ ὀνόματι μόνον τὸ συμβεβηκός ἐστι. διὸ Πλάτων τρόπον τινὰ οὐ κακῶς τὴν σοφιστικὴν περὶ τὸ μὴ ὂν ἔταξεν. εἰσὶ γὰρ οἱ τῶν σοφιστῶν λόγοι περὶ τὸ συμβεβηκὸς ὡς εἰπεῖν μάλιστα πάντων. L. 21: φαίνεται γὰρ τὸ συμβεβηκὸς ἐγγύς τι τοῦ μὴ ὄντος.

fore Aristotle says that the contingent borders on the non-existent.[1] After what has been already said about the nature of Knowledge, it scarcely needs, therefore, to be explicitly stated that such a principle as Contingency can be no object of Science.

While it is obvious from what has just been said about the nature of Matter, that it is something far more *primordial* than might have been expected from the first definition given of its concept, this becomes still clearer from other considerations. From 'Matter' Aristotle is not contented with deducing merely what one is apt to consider as accidental and unessential, but also certain properties of things which essentially belong to the conception of them and contribute to determining their generic character. The distinction, for example, between male and female is said to be merely one of material;[2] and yet procreation, which depends upon it,[3] occupies a most important place in the scheme of the philosopher.[4]

[1] *Anal. Post.* i. 6, 75, a, 18, c. 30, 33 *init.* *Metaph. ibid.* 1026, b, 2, 1027, a, 19 (xi. 8).

[2] *Metaph.* vii. 5, 1030, b, 21, sex is reckoned one of the essential attributes, the *καθ' αὑτὰ ὑπάρχοντα*; but x. 9 *init.* it is asked *διὰ τί γυνὴ ἀνδρὸς οὐκ εἴδει διαφέρει . . . οὐδὲ ζῷον θῆλυ καὶ ἄρρεν ἕτερον τῷ εἴδει, καίτοι καθ' αὑτὸ τοῦ ζῴου αὕτη ἡ διαφορὰ καὶ οὐχ ὡς λευκότης καὶ μελανία, ἀλλ' ᾗ ζῷον, καὶ τὸ θῆλυ καὶ τὸ ἄρρεν ὑπάρχει;* and the answer is that a distinction in kind rests on *ἐναντιότητες ἐν τῷ λόγῳ* alone, not on those *ἐν τῇ ὕλῃ. τὸ δὲ ἄρρεν καὶ θῆλυ τοῦ ζῴου οἰκεῖα μὲν πάθη, ἀλλ' οὐ κατὰ τὴν οὐσίαν, ἀλλ' ἐν τῇ ὕλῃ καὶ τῷ σώματι. διὸ τὸ αὐτὸ σπέρμα θῆλυ ἢ ἄρρεν γίγνεται παθόν τι πάθος.* Cf. *Gen. An.* iv. 3, 767, b, 8 sqq., ii. 3, 737, a, 27, and p. 353, n. 4, *supra*.

[3] *De An.* ii. 4, 415, a, 26, and other passages. That this is incompatible with the statement in *Metaph.* x. 9, was rightly remarked by ENGEL, *Ueb. d. Bedeut. d. ὕλη Arist.*, *Rhein. Mus.* N.F. vii. 410.

[4] It is even stated, *Gen. An.* i. 2, 716, a, 17, b, 8, that the sexual distinction, depending as it does on difference of function, is *κατὰ τὸν λόγον* and is one *οὐ κατὰ τὸ τυχὸν μόριον οὐδὲ κατὰ τὴν τυχοῦσαν δύναμιν.*

Similarly we shall have occasion to observe that the lower animals, which Aristotle always represents as even in their physical nature different in kind from human beings, are yet at the same time to be regarded as imperfect formations which have been prevented (owing, we must suppose, to the properties of Matter) from developing into the form of man. Furthermore, it is to Matter that we must refer the mutability and corruptibility of earthly things;[1] and the same must be

[1] This follows from the general consideration that all Change and Becoming presupposes a material (see p. 342, n. 2 sq. *supra*) which, as δυνάμει ὂν contains the possibility alike of being and not-being (*Gen. et Corr.* ii. 9; *Metaph.* vii. 7, and other passages. Cf. p. 345, n. 5), as Aristotle himself distinctly says. Cf. *Metaph.* vii. 15 (see p. 220, n. 2, *supra*), ix. 8, 1050, b, 7: ἔστι δ' οὐδὲν δυνάμει ἀΐδιον. [Or as this is expressed *Phys.* iii. 4, 203, b, 30: ἐνδέχεσθαι γὰρ ἢ εἶναι οὐδὲν διαφέρει ἐν τοῖς ἀϊδίοις.] λόγος δὲ ὅδε. πᾶσα δύναμις ἅμα τῆς ἀντιφάσεώς ἐστιν [the possibility of being involves the possibility of not being, &c.] . . τὸ ἄρα δυνατὸν εἶναι ἐνδέχεται καὶ εἶναι καὶ μὴ εἶναι (cf. p. 234, n. 1), . . . τὸ δ' ἐνδεχόμενον μὴ εἶναι φθαρτόν (similarly, xiv. 2, *init.*). The motion, therefore, of every perishable thing is combined with effort, for only thus is the possibility of the opposite state (the δύναμις τῆς ἀντιφάσεως, ll. 25, 30 sqq.) overcome: ἡ γὰρ οὐσία ὕλη καὶ δύναμις οὖσα, οὐκ ἐνέργεια, αἰτία τούτου; viii. 4, 1044, b, 27: οὐδὲ παντὸς ὕλη ἐστὶν ἀλλ' ὅσων γένεσίς ἐστι καὶ μεταβολὴ εἰς ἄλληλα. ὅσα δ' ἄνευ τοῦ μεταβάλλειν ἔστιν ἢ μή, οὐκ ἔστι τούτων ὕλη; vii. 10, 1035, a, 25: ὅσα μὲν οὖν συνειλημμένα τὸ εἶδος καὶ ἡ ὕλη ἐστὶν . . . ταῦτα μὲν φθείρεται εἰς ταῦτα . . . ὅσα δὲ μὴ συνείληπται τῇ ὕλῃ, ἀλλ' ἄνευ ὕλης . . . ταῦτα δ' οὐ φθείρεται ἢ ὅλως ἢ οὔτοι οὕτω γε (similarly it is said of immaterial forms, xii. 3, 1070, a, 15: οὐδ' ἔστι γένεσις καὶ φθορὰ τούτων, ἀλλ' ἄλλον τρόπον εἰσὶ καὶ οὐκ εἰσὶν οἰκία τε ἡ ἄνευ ὕλης καὶ ὑγίεια καὶ πᾶν τὸ κατὰ τέχνην: not the form as such, as we must understand l. 22, but only its union with this or that material has a beginning and end); xii. 1, 1069, b, 3: ἡ δ' αἰσθητὴ οὐσία μεταβλητή; 2, 1069, b, 24: πάντα δ' ὕλην ἔχει ὅσα μεταβάλλει. *Longit.* v. 3, 465, b, 7: ᾧ μή ἐστιν ἐναντίον καὶ ὅπου μή ἐστιν ἀδύνατον ἂν εἴη φθαρῆναι But we may not infer from this the indestructibility of any material thing: ἀδύνατον γὰρ τῷ ὕλην ἔχοντι μὴ ὑπάρχειν πως τὸ ἐναντίον. πάντῃ μὲν γὰρ ἐνεῖναι τὸ θερμὸν ἢ τὸ εὐθὺ ἐνδέχεται, πᾶν δ' εἶναι ἀδύνατον ἢ θερμὸν ἢ εὐθὺ ἢ λευκόν· ἔσται γὰρ τὰ πάθη κεχωρισμένα [' for in this case these qualities would be independent exist-

said of all badness and imperfection,[1] although the per-

ences']. εἰ οὖν, ὅταν ἅμα ᾖ τὸ ποιητικὸν καὶ τὸ παθητικὸν, ἀεὶ τὸ μὲν ποιεῖ τὸ δὲ πάσχει, ἀδύνατον μὴ μεταβάλλειν. *De Cœlo*, i. 12, 283, a, 29: nothing that is without beginning can have an end, and nothing that is without end can have had a beginning, since this could only be if it were its nature at one time to be, at another not to be. τῶν δὲ τοιούτων ἡ αὐτὴ δύναμις τῆς ἀντιφάσεως καὶ ἡ ὕλη αἰτία τοῦ εἶναι καὶ μή.

[1] *Metaph.* ix. 9, 1051, a, 15; Aristotle seems, indeed, to assert the very opposite of this: ἀνάγκη δὲ καὶ ἐπὶ τῶν κακῶν τὸ τέλος καὶ τὴν ἐνέργειαν εἶναι χεῖρον τῆς δυνάμεως· τὸ γὰρ δυνάμενον ταὐτὸ ἄμφω τἀναντία. δῆλον ἄρα ὅτι οὐκ ἔστι τὸ κακὸν παρὰ τὰ πράγματα· ὕστερον γὰρ τῇ φύσει τὸ κακὸν τῆς δυνάμεως. But this only means that since every δύναμις contains the possibility of opposite determinations (see p. 234, n. 1, *supra*) to what is merely δυνάμει ὂν we cannot attribute one of two mutually exclusive qualities, such as good and bad, as the Platonists had done in explaining matter as evil (cf. *Div.* i. 642, 6, 721, 737). Nevertheless, the ultimate cause of evil can only reside in the δυνάμει ὄν, in other words, in matter, and this is indicated by Aristotle himself when, in the passage just quoted, he proceeds: οὐκ ἄρα οὐδ' ἐν τοῖς ἐξ ἀρχῆς καὶ τοῖς ἀϊδίοις οὐθέν ἐστιν οὔτε κακὸν οὔτε ἁμάρτημα οὔτε διεφθαρμένον· καὶ γὰρ ἡ διαφθορὰ τῶν κακῶν ἐστίν. There is no imperfection in the eternal, since it exists continually ἐνεργείᾳ, and therefore excludes the possibility of opposites, since its conception has for ever been realised in it and will always continue to be realised. Evil and imperfection, on the other hand, consist in nothing else than a discrepancy between the concept of a thing and its actual state. While, therefore, on the one hand, the δυνάμει ὂν cannot be itself evil, yet is it, on the other hand, the ultimate cause and condition of it. Accordingly Aristotle himself speaks (*Phys.* i. 9, 192, a, 15) of the κακοποιὸν of the ὕλη. He admits that it is not evil in itself and in its essence, but only in a secondary sense, and in so far as, being without form, it lacks also the quality of goodness (cf. p. 324, n. 5, and p. 344, n. 1). But it is precisely upon this want and this indeterminateness that the possibility of its turning out bad as well as good depends. Eternal reality excludes evil, since it has either no matter at all, or one which, as perfectly definite and formed, is incapable of opposite determinations—while mutability and change, on the other hand, are sure indications of evil and imperfection. (On this subject cf also *Eth. N.* vii. 15, 1154, b, 28: μεταβολὴ δὲ πάντων γλυκύτατον, κατὰ τὸν ποιητὴν, διὰ πονηρίαν τινά. ὥσπερ γὰρ ἄνθρωπος εὐμετάβολος ὁ πονηρὸς, καὶ ἡ φύσις ἡ δεομένη μεταβολῆς· οὐ γὰρ ἁπλῆ οὐδ' ἐπιεικής.) And so we shall find that Aristotle traces all imperfect forms of natural existence to the resistance which the matter offers to the form: and by a parity of reasoning he would have been forced to refer the

fect and imperishable heavenly bodies are no less formed of a definite material.[1] In Matter alone we must seek for the cause of change and motion, which result from an innate striving of Matter after Form.[2] Matter, finally, is the source of individual existence, in all those things at least which are formed of the union of Matter and Form. Aristotle certainly did not treat of the principle of Individualisation with the universality and definiteness that we could have wished: and thereby he bequeathed to his followers in the Middle Ages a rich opportunity for scientific controversy. We shall find hereafter that, in addition to corporeal beings, he recognises in the Deity, the spheral spirits and the rational part ot man, incorporeal beings free from any taint of Matter, which we must nevertheless regard as being also individual existences.[3] Yet when the Form becomes actual in any material, it is the latter alone which explains why the

source of moral evil to the body, which in his general scheme is alone passive and changeable, had he not, as we shall see hereafter, left this question wholly vague.

[1] Aristotle himself has not overlooked this objection. He meets it (*Metaph.* viii. 4, 1044, b, 6) with the remark: ἐπὶ δὲ τῶν φυσικῶν μὲν ἀϊδίων δὲ οὐσιῶν ἄλλος λόγος. ἴσως γὰρ ἔνια οὐκ ἔχει ὕλην, ἢ οὐ τοιαύτην (as the φυσικαὶ καὶ γεννηταὶ οὐσίαι) ἀλλὰ μόνον κατὰ τόπον κινητήν. Similarly xii. 2, 1069, b, 24. The ether, for instance, of which the heavens and the heavenly bodies consist, is said to have no ἐναντίωσις and therefore to be subject to no change in its substance. It has none of the qualities on which rest the mutual opposition of the elements and their transformation into one another (cf. p. 358 sqq.). The question is, how it *can* be so, if it is really matter and if all matter is a δυνάμει ὂν and all δύναμις contains the possibility of opposite states.

[2] On this, more *infra*.

[3] The solution which the Schoolmen in their doctrine of angels devised, to the effect that each of these pure spirits, as specifically different from every other and itself the only member of the species, is therefore at once specifically and numerically single, is nowhere suggested by Aristotle.

Form is never present in it except under certain limiting conditions and with certain definite properties, which are not contained in the Form as such—that is, in the pure Concept of the thing. The Form or Concept is always a Universal,[1] denoting not a thing but a kind,[2] and capable of being thought, but not of existing, by itself apart from things.[3] Between the Individuals into which the *infimæ species* resolve themselves no difference of kind or Form any longer exists,[4] and consequently they must be distinguished from one another by their Matter.[5] Aristotle is unable to apply this principle unwaveringly[6] through-

[1] See p. 219, n. 4, and p. 221, *supra*; and upon εἶδος as the object of the conception see notes on pp. 216 and 341, &c., and cf. p. 173, n. 2.

[2] *Metaph.* viii. 8, 1033, b, 21: the form is not something apart from definite material things, ἀλλὰ τὸ τοιόνδε σημαίνει, τόδε καὶ ὡρισμένον οὐκ ἔστιν, ἀλλὰ ποιεῖ καὶ γεννᾷ ἐκ τοῦδε τοιόνδε. But this is itself the distinctive mark of universality; see pp. 333, &c. *supra*.

[3] *Phys.* ii. 1, 193, b, 4: ἡ μορφὴ καὶ τὸ εἶδος, οὐ χωριστὸν ὂν ἀλλ' ἢ κατὰ τὸν λόγον. *Metaph.* viii. 1, 1042, a, 26 sqq.; *v. infra*, n. 6.

[4] See notes at pp. 216, 221, &c. *supra*.

[5] *Metaph.* vii. 8 *fin.* (cf. c. 10, 1035, b, 27 sqq.): the form unites with the matter, τὸ δ' ἅπαν ἤδη τὸ τοιόνδε εἶδος ἐν ταῖσδε ταῖς σαρξὶ καὶ ὀστοῖς Καλλίας καὶ Σωκράτης· καὶ ἕτερον μὲν διὰ τὴν ὕλην, ἑτέρα γάρ, ταὐτὸ δὲ τῷ εἴδει· ἄτομον γὰρ τὸ εἶδος; x. 9, 1058, a, 37: ἐπειδὴ ἔστι τὸ μὲν λόγος τὸ δ' ὕλη, ὅσαι μὲν ἐν τῷ λόγῳ εἰσὶν ἐναντιότητες εἴδει ποιοῦσι διαφοράν, ὅσαι δ' ἐν τῷ συνειλημμένῳ τῇ ὕλῃ οὐ ποιοῦσιν. διὸ ἀνθρώπου λευκότης οὐ ποιεῖ οὐδὲ μελανία . . . ὡς ὕλη γὰρ ὁ ἄνθρωπος, οὐ ποιεῖ δὲ διαφορὰν [a specific difference] ἡ ὕλη· οὐκ ἀνθρώπου γὰρ εἴδη εἰσὶν οἱ ἄνθρωποι διὰ τοῦτο, καίτοι ἕτεραι αἱ σάρκες καὶ τὰ ὀστᾶ ἐξ ὧν ὅδε καὶ ὅδε· ἀλλὰ τὸ σύνολον ἕτερον μέν, εἴδει δ' οὐχ ἕτερον, ὅτι ἐν τῷ λόγῳ οὐκ ἔστιν ἐναντίωσις.

[6] There are certainly passages in Aristotle in which that which constitutes the difference between individuals of the same species seems to be included in the conception of their εἶδος; thus it cannot be overlooked that the conception, *e.g.*, of man, which according to the passage just quoted is an *infima species*, does not exclude certain individual differences which have a reference, not to the matter alone, but also to the form of the individual members of it (*e.g.* their bodily form). No clear distinction, however, is anywhere drawn between this individual form, and the universal form or class conception which expresses the common

out; but it is clear that his system leaves no room for

essence of several individual things; on the contrary, the former always resolves itself finally into the latter. *Metaph.* xii. 5, 1071, a, 27, it is said: καὶ τῶν ἐν ταὐτῷ εἴδει ἕτερα [sc. τὰ στοιχεῖά ἐστιν], οὐκ εἴδει, ἀλλ' ὅτι τῶν καθέκαστον ἄλλο, ἥ τε σὴ ὕλη καὶ τὸ κινῆσαν καὶ τὸ εἶδος καὶ ἡ ἐμή, τῷ καθόλου δὲ λόγῳ ταὐτά. While, however, according to this passage everyone has an εἶδος of his own different from that of everyone else, still the one does not differ from the other in kind. They will differ from one another, therefore, only in so far as they belong to different subjects: or in other words, in their actual embodiment, not in their character—ἀριθμῷ, not εἴδει. *Metaph.* vii. 3 (cf. p. 372, n. 3), 1029, a, 1, it is said: the name οὐσία seems to belong in the first place to the ὑποκείμενον πρῶτον· τοιοῦτον δὲ τρόπον μέν τινα ἡ ὕλη λέγεται, ἄλλον δὲ τρόπον ἡ μορφή, τρίτον δὲ τὸ ἐκ τούτων. Since, then, by ὑποκείμενον or substance the individual thing as the subject of all its predicates is elsewhere understood (cf. pp. 332 sqq., 300, &c.), we should naturally refer μορφὴ here to the form of the individual thing *qua* individual. But from the further explanation, c. 8, it appears that this μορφὴ ἐν τῷ αἰσθητῷ (1033, b, 5), this ὡς εἶδος ἢ οὐσία λεγόμενον, is only the unrealised form which first makes this definite thing into a thing which is defined in this or that way (τόδε into a τοιόνδε, l. 23) in the actual thing, *i.e.* in the matter, but which on the other hand itself stands related to individual things as man is to Callias or Socrates. The only ground of individuality lies in the matter: ἐν παντὶ τῷ γενομένῳ ὕλη ἔνεστι, καὶ ἔστι [and therefore is] τὸ μὲν τόδε τὸ δὲ τόδε (l. 18). Exactly the same is true of *Metaph.* viii. 1, 1042, a, 26 (ἔστι δ' οὐσία τὸ ὑποκείμενον, ἄλλως μὲν ἡ ὕλη . . . ἄλλως δ' ὁ λόγος καὶ ἡ μορφή, ὃ τόδε τι ὂν τῷ λόγῳ χωριστόν ἐστι. τρίτον δὲ τὸ ἐκ τούτων, οὗ γένεσις μόνου καὶ φθορά ἐστι καὶ χωριστὸν ἁπλῶς), and of the similar statement, *Metaph.* v. 8 (see p. 372, n. 2, *infra*). The form is a τόδε in so far as it expresses a definite kind of being (man, beast, &c.); but it becomes the form of a definite individual thing in being united with a definite material. Considered apart from this union it is a universal, and it is not true to conclude, as HERTLING does (*Form u. Mat.* 56), from the fact that *Phys.* iv. 3, 210, b, 29 sq., seems to reckon the εἶδος as well as the ὕλη a constituent element of the thing, that it is 'the constitutive principle of individual being.' This is true rather of the material in which the form is first individualised. Even *De An.* ii. 1, 412, a, 6 leads to no other conclusion. It is there said: λέγομεν δὴ γένος ἕν τι τῶν ὄντων τὴν οὐσίαν, ταύτης δὲ τὸ μὲν ὡς ὕλην, ὃ καθ' αὑτὸ μὲν οὐκ ἔστι τόδε τι, ἕτερον δὲ μορφὴν καὶ εἶδος, καθ' ἣν ἤδη λέγεται τόδε τι, καὶ τρίτον τὸ ἐκ τούτων. The thing is called this definite thing, *i.e.* a thing of this kind, because its material has received this form; so the τόδε τι means here also, not the individual, but the specific peculiarity. —Still less in such passages as

individual Forms of sensible things.[1] Every Individual

*Metaph.* xii. 5, 1071, a, 20 (ἀρχὴ γὰρ τὸ καθ' ἕκαστον τῶν καθ' ἕκαστον· ἄνθρωπος γὰρ ἀνθρώπου καθόλου· ἀλλ' ἔστιν οὐδείς, ἀλλὰ Πηλεὺς Ἀχιλλέως, &c.) it is (as HERTLING says at p. 57), stated 'in plain words that the form, like all first principles, must be individual.' Peleus, however, is not the mere form of an individual but a real individual; and he has become so by the union of the fórm man with this particular human body. Moreover, ἴδιον εἶδος (*Metaph.* xii. 5, 1071, a, 14) refers, not to the individual form of this or that man, but to the form man in general. So also the remark (*De An.* i. 3, 407, b, 23) that any soul may not enter any body, since all have their ἴδιον εἶδος καὶ μορφήν, must be taken to refer to bodies and souls of different kinds, and to mean that the soul of a man may not wander into the body of a beast. And when *Gen. An.* iv. 1, 766, a, 66 sqq. explains the origin of the female sex on the ground that the male principle cannot transform the material into its ἴδιον εἶδος, it is not dealing with the individual type, but with the form of the male sex. It does not alter the case here that difference of sex according to *Metaph.* x. 9 (see p. 365, n. 2, *supra*) resides not in the οὐσία (= εἶδος) of the ζῷον but only in the ὕλη and the σῶμα: for even although it be true that to Aristotle this difference concerns, not the essence of man or animal as such, but only the form of the body, yet it is not on that account a mere question of individuality.

[1] HERTLING (*Form u. Mat.* 48 sq.) believes that the form in Aristotle must necessarily be an individual thing, since it gives to the individual its peculiar nature, and is thus distinguished from the essence (τὸ τί ἦν εἶναι), which is always, at least in sensible things, a universal. He admits, however, that these two conceptions, which in certain passages Aristotle undoubtedly recognises as distinct, are as a rule used interchangeably by him. It seems more correct to say, on the contrary, that it was Aristotle's conscious intention to identify the two, and to treat the form as well as the essence as a universal. If we find individual expressions in him which do not wholly harmonise with this view, this is an inconsistency which the actual facts of the case forced upon him. It is not the expression of the view with which he started and which was only afterwards obscured. That the essence of each thing lies in its form is to Aristotle an incontrovertible position, and is stated by him with the greatest definiteness. The opposite he never stated in express words; it can only be deduced from casual expressions to which we cannot certainly prove that Aristotle himself consciously attached this significance. As a matter of fact the boundary line between the essential marks which constitute the class conception, and the unessential which constitute mere individual difference, is very impalpable. In every attempt to define it and to explain certain differences among things as class differences, others as individual varieties within the same class, we shall come upon cases in which a certain indefiniteness is

therefore implies a material element,[1] and everything that has a body is an Individual.[2] Aristotle uses the two terms 'object of sense' and 'individual' indifferently.[3] If Matter is the cause of all this, it is impossible to suppose that it is distinguished from Form only by privation and non-existence: rather must it contribute something of its own to Form.

Matter, viewed in this light, must be rated at even

inevitable. That Aristotle experienced this difficulty is undeniable: but it does not therefore follow that he did not make the attempt, and that he intended from those εἴδη which coincide with class conceptions to distinguish a second kind of εἴδη which represent, not what is common to the class, but what is peculiar to the individual. The truth is that there is no place in his scheme for such individual forms. For since according to the well-known view that the form has neither origin nor end (see p. 342—and this must hold also of the form which as τόδε τι is in an individual existence—see preceding note) the individual forms of sensible things, if there are such, must be in actual fact separable from the things whose form they are; but this in Aristotle's view is wholly inadmissible.

[1] *Metaph.* vii. 11, 1037, a, 1: καὶ παντὸς γὰρ ὕλη τίς ἐστιν ὃ μὴ ἔστι τί ἦν εἶναι καὶ εἶδος αὐτὸ καθ' αὐτὸ ἀλλὰ τόδε τι. *Ibid.* xii. 8, cited p. 339, n. *supra.* This only refers, however, as has there been already remarked, to the individual members of an *infima species.*

[2] See *e.g. Metaph.* i. 6, 988, a, 1: Plato makes matter the source of multiplicity, καίτοι συμβαίνει γ' ἐναντίως . . . οἱ μὲν γὰρ ἐκ τῆς ὕλης πολλὰ ποιοῦσιν . . . φαίνεται δ' ἐκ μιᾶς ὕλης μία τράπεζα: which, however, Plato did not deny, since it is just because the same material gives only one specimen, that material things constitute a plurality even when there is no distinction of kind between them—as Aristotle also holds.

[3] Cf. *Metaph.* iii. 4 (cited p. 342, n. *supra*) where he says: if there were nothing but individual things, there would be nothing but sensible existence; xii. 3, 1070, a, 9: οὐσίαι δὲ τρεῖς, ἡ μὲν ὕλη τόδε τι οὖσα τῷ φαίνεσθαι . . . ἡ δὲ φύσις (here = εἶδος) τόδε τι, εἰς ἥν, καὶ ἕξις τις· ἔτι τρίτη ἡ ἐκ τούτων, ἡ καθ' ἕκαστα. *De Cœlo*, i. 9, 227, b, 30 sq. (cf. p. 219, n.): Form as such is something different from form in the material; and if, for instance, there existed only one single circle, *the* circle would still continue to be something different from *this* circle. The one would be the εἶδος, the other εἶδος ἐν τῇ ὕλῃ καὶ τῶν καθ' ἕκαστον. ἐπεὶ οὖν ἐστιν ὁ οὐρανὸς αἰσθητὸς τῶν καθ' ἕκαστον ἂν εἴη. τὸ γὰρ αἰσθητὸν ἅπαν ἐν τῇ ὕλῃ ὑπῆρχεν. 'Individual reality' and εἶδος ἐν τῇ ὕλῃ here signify the same thing.

a higher value, when we recollect that Aristotle allowed substantiality in its full sense *to the Individual* alone.[1] If the Individual alone is Substance, and if Form, as we have just seen, is always universal, and if therefore the true ground of individual existence is Matter—then we cannot escape the consequence that Matter supplies the ground also of substantial being, and that it is not pure Form, but the composite result of Form and Matter which alone is Substance. Indeed, since we have defined Substance as 'the substratum' (ὑποκείμενον)[2] and have also recognised in Matter the substratum of all Being,[3] this would seem to give Matter the right to claim that it alone should be regarded as the primitive Substance of all things. Yet it is impossible for Aristotle to admit this. Full and original reality belongs to Form alone; Matter, on the contrary, is no more than the bare Potentiality of that whereof the Actuality is Form. Not only, therefore, is it impossible that Matter can be substantial, but from its union with Form there can be produced nothing higher than pure Form. Moreover, there are innumerable passages in which Aristotle expressly identifies Form with Substance.[4] He declares that in all primitive and absolute existences, the intelligible essence is not different from the thing to which it belongs,[5] so that it constitutes the Substance

[1] See pp. 331 sqq.

[2] See pp. 300, 333, and notes.

[3] See pp. 344 sq.

[4] *E.g.*, *Metaph.* i. 3, 983, a, 27; iii. 4, 999, b, 12 sqq.; vii. 4, 1030, b, 5, c. 7, 1032, b, 1, 14 (εἶδος δὲ λέγω τὸ τί ἦν εἶναι ἑκάστου καὶ τὴν πρώτην οὐσίαν . . . λέγω δ' οὐσίαν ἄνευ ὕλης τὸ τί ἦν εἶναι), c. 10, 1035, b, 32, c. 11, 1037, a, 29, c. 17, 1041, b, 8; viii. 1, 1042, a, 17, c. 3, 1043, b, 10 sqq.; ix. 8, 1050, a, 5; *Gen. et Corr.* ii. 9, 335, b, 6; *Meteor.* iv. 2, 379, b, 26, c. 12, 390, a, 5; *Part. An.* i. 1, 641, a, 25; *Gen. An.* i. 1, 714, a, 5. Cf. p. 214, n.

[5] *Metaph.* vii. 6 in answer to

of the thing. Further, he will not suffer anything else to be considered absolutely real except absolutely immaterial Form, or pure spirit. It is not a sufficient solution to recall the different senses in which the term Substance (*οὐσία*) is used,[1] since it is not here a question merely of the use of language but of the claim to actuality in the full and strict sense of the word. The question is whether we are to assign it to individual things as such, or only to their intelligible essence, *i.e.* to a Form which is unaffected by change in the individual thing and remains for ever self-identical. Here we detect a difficulty, or rather a contradiction, which threatens to shake the very foundations of the system.

Aristotle did not succeed in evading it altogether. In his Metaphysics he asks the question where we ought to look for the substance of things—in the Form, or in the Matter, or in the composite Whole produced by

the question (1031, a, 15) *πότερον ταὐτόν ἐστιν ἢ ἕτερον τὸ τί ἦν εἶναι ἢ ἕκαστον*; it is said that they are different only in the case in which a conception belongs to a thing *κατὰ συμβεβηκὸς* (as mere predicate), whereas on the other hand when the conception expresses the essence of the thing itself they are one and the same. *E.g.* the conception of whiteness is different from the *λευκὸς ἄνθρωπος*; on the other hand the *ἑνὶ εἶναι* is not different from the *ἕν*, the *ἀγαθῷ εἶναι* from the *ἀγαθὸν*, nor again (c. 10, 1036, a, 1, cf. viii. 3, 1043, b, 2) the *κύκλῳ εἶναι* from the *κύκλος*, the *ψυχῇ εἶναι* from the *ψυχή*. Otherwise (not to mention other reasons) conceptions would not exist, things would not be known (*τῶν μὲν οὐκ ἔσται ἐπιστήμη, τὰ δ' οὐκ ἔσται ὄντα* 1031, b, 3). This holds of all *ὅσα μὴ κατ' ἄλλο λέγεται, ἀλλὰ καθ' αὑτὰ καὶ πρῶτα*. 1031, b, 13, cf. 1032, a, 5: *τῶν πρώτων καὶ καθ' αὑτὰ λεγομένων τὸ ἑκάστῳ εἶναι καὶ ἕκαστον τὸ αὐτὸ καὶ ἕν ἐστι*; c. 11, 1037, a, 33 sqq.

[1] Cf. the following notes and *Metaph.* v. 8, 1017, b, 23: *συμβαίνει δὴ κατὰ δύο τρόπους τὴν οὐσίαν λέγεσθαι, τό θ' ὑποκείμενον ἔσχατον, ὃ μηκέτι κατ' ἄλλου λέγεται, καὶ ὃ ἂν τόδε τι ὂν καὶ χωριστὸν ᾖ*· [where, however, as SCHWEGLER and BONITZ rightly remark upon this passage, we can only understand the *λόγῳ χωριστὸν* to be meant; on which cf. viii. 1; see p. 369, n. 6, *supra*]

the combination of both.[1] But his answer is far from satisfactory. He admits that Matter cannot properly be termed Substance,[2] yet, on the other hand, he does not venture to deprive it altogether of this title, since it is the substratum of all Being, the permanent amid change.[3] Nor is it sufficient to maintain that Matter is substantial in a different sense from Form, the latter being actually, the former only potentially so;[4] for how can we conceive of a Substance

τοιοῦτον δὲ ἑκάστου ἡ μορφὴ καὶ τὸ εἶδος.

[1] VII. 3 *init.* (cf. at p. 370): we may use 'substance' in various ways: as equivalent to the τί ἦν εἶναι, the καθόλου, the γένος, the ὑποκείμενον. By the last, again, we may understand either the ὕλη or the μορφή or the composite product of both. Of these, however, the καθόλου, and with it the γένος (on the relation of which to the καθόλου, see p. 213 sq.), are quietly set aside, c. 13 (cf. p. 333, *supra*) and since the μορφή coincides with the τί ἦν εἶναι there only remain the three above-mentioned significations of οὐσία. Cf. c. 13 *init.*, viii. 1, 1042, a, 26 sqq.; *ibid.* c. 2; *De An.* ii. 1 (see p. 369, n. 6, *supra*); *Ind. Arist.* 545, a, 23 sq.

[2] *Metaph.* vii. 3, 1029, a, 27, after adducing several reasons in support of the view that the substance = the matter, he goes on: ἀδύνατον δέ· καὶ γὰρ τὸ χωριστὸν καὶ τὸ τόδε τι ὑπάρχειν δοκεῖ μάλιστα τῇ οὐσίᾳ, διὸ τὸ εἶδος καὶ τὸ ἐξ ἀμφοῖν οὐσία δόξειεν ἂν εἶναι μᾶλλον τῆς ὕλης. Cf. further, p. 345 sqq.

[3] *Metaph.* viii. 1, 1042, a, 32: ὅτι δ' ἐστὶν οὐσία καὶ ἡ ὕλη δῆλον. ἐν πάσαις γὰρ ταῖς ἀντικειμέναις μεταβολαῖς ἐστί τι τὸ ὑποκείμενον ταῖς μεταβολαῖς. Cf. p. 344. *Ibid.* ix. 7, 1049, a, 34: the substratum of the τόδε τι is ὕλη καὶ οὐσία ὑλική; vii. 10, 1035, a, 1: εἰ οὖν ἐστὶ τὸ μὲν ὕλη τὸ δ' εἶδος τὸ δ' ἐκ τούτων, καὶ οὐσία ἥ τε ὕλη καὶ τὸ εἶδος καὶ τὸ ἐκ τούτων. *Phys.* i. 9, 192, a, 3 (cf. pp. 342 sqq. and notes): ἡμεῖς μὲν γὰρ ὕλην καὶ στέρησιν ἕτερόν φαμεν εἶναι, καὶ τούτων τὸ μὲν οὐκ ὂν εἶναι κατὰ συμβεβηκός, τὴν ὕλην, τὴν δὲ στέρησιν καθ' αὑτήν, καὶ τὴν μὲν ἐγγὺς καὶ οὐσίαν πως, τὴν ὕλην, τὴν δὲ στέρησιν οὐδαμῶς. *De An* ii. 1 (see p. 669, n. 6, *supra*).

[4] *Metaph.* viii. 1, 1042, a, 26: ἔστι δ' οὐσία τὸ ὑποκείμενον, ἄλλως μὲν ἡ ὕλη, . . . ἄλλως δ' ὁ λόγος καὶ ἡ μορφή, . . . τρίτον δὲ τὸ ἐκ τούτων; c. 2 *init.*: ἐπεὶ δ' ἡ μὲν ὡς ὑποκειμένη καὶ ὡς ὕλη οὐσία ὁμολογεῖται, αὕτη δ' ἐστὶν ἡ δυνάμει, λοιπὸν τὴν ὡς ἐνέργειαν οὐσίαν τῶν αἰσθητῶν εἰπεῖν τίς ἐστιν. *Ibid. fin.*: φανερὸν δὴ ἐκ τῶν εἰρημένων τίς ἡ αἰσθητὴ οὐσία ἐστὶ καὶ πῶς· ἡ μὲν γὰρ ὡς ὕλη, ἡ δ' ὡς μορφή, ὅτι ἐνέργεια· ἡ δὲ τρίτη ἡ ἐκ τούτων; xiv. 1, 1088, b, 1 (against the Platonic doctrine of an abso-

which is merely potential: that is, an absolute existence which does not yet actually exist? If we grant that Form is the proper Substance of things, actual existence in the highest sense, and that as such it is opposed not only to Matter but also to the composite product of Matter and Form,[1] yet Aristotle has done nothing at all to show how this is possible, considering that Form in itself is always a Universal, that the Individual is always burdened with Matter, and that Substance is originally individual Substance. In like manner he fails to tell us how mere Form can be the essence and substance of things which cannot be conceived apart from a definite material composition;[2] or again how Matter devoid of quality and determination can produce the individual determinateness of particular existences which are not related to each other as so many impressions of a die but are differentiated from one another qualitatively by definite properties. Finally, it is not easy to see why birth and extinction should pertain to things that are the joint product of Form and Matter, and yet not to Form

lutely great and small): ἀνάγκη τε ἑκάστου ὕλην εἶναι τὸ δυνάμει τοιοῦτον, ὥστε καὶ οὐσίας· τὸ δὲ πρός τι οὔτε δυνάμει οὐσία οὔτε ἐνεργείᾳ.

[1] *Metaph.* viii. 3 *init.*: ἐνίοτε λανθάνει πότερον σημαίνει τὸ ὄνομα τὴν σύνθετον οὐσίαν ἢ τὴν ἐνέργειαν καὶ τὴν μορφήν, οἷον ἡ οἰκία πότερον σημεῖον τοῦ κοινοῦ ὅτι σκέπασμα ἐκ πλίνθων καὶ λίθων ὡδὶ κειμένων, ἢ τῆς ἐνεργείας καὶ τοῦ εἴδους ὅτι σκέπασμα; vii. 3, 1029, a, 5: εἰ τὸ εἶδος τῆς ὕλης πρότερον καὶ μᾶλλον ὄν, καὶ τοῦ ἐξ ἀμφοῖν πρότερον ἔσται; line 29: τὸ εἶδος καὶ τὸ ἐξ ἀμφοῖν οὐσία δόξειεν ἂν εἶναι μᾶλλον τῆς ὕλης. τὴν μὲν τοίνυν ἐξ ἀμφοῖν οὐσίαν, λέγω δὲ τὴν ἔκ τε τῆς ὕλης καὶ τῆς μορφῆς, ἀφετέον· ὑστέρα γὰρ καὶ δήλη.

[2] Aristotle frequently distinguishes between conceptions of pure form and of form inherent in a definite material; the standing example of the latter is the σιμὸν as distinguished from the κοῖλον; so also axe, saw, house, statue, and even soul. Cf. *Phys.* ii. 1, 194, a, 12, ii. 9 *fin.* *De An.* i. 1, 403, b, 2, ii. 1, 412, b, 11. *Metaph.* vii. 5, c. 10, 1035, a, 1 sqq. b, 74, c. 11, 1037, a, 29.

or Matter separately.[1] For even if we can suppose that Matter as such had no beginning, it is hard to imagine that the Forms of created things were uncreated, if they neither exist independently as Ideas nor are originally inherent in Matter. All these difficulties exhibit the same conclusion that we discerned in dealing with the notion of Substance. The fact is that Aristotle combines in his Metaphysics two different points of view, which he fails to harmonise. On the one side he adheres to the Socratico-Platonic principle that the true essence of things is to be found in their Concept, and this is always Universal. On the other side he acknowledges that this Universal has no existence apart from the Individual, which he therefore declares to be the Substance. He cannot explain how these two positions may coexist in one philosophy, and hence the above-mentioned contradictions arise. At one time the Form, at another the Individual which is the product of the union of Form and Matter, appears to be the Actual. Matter causes results incompatible with mere Potentiality. It is represented at the same time as indefinite Universality and as the ground of individual determinateness. So the un-

[1] *Metaph.* vii. 15 cited at p. 219, n. 4, *supra*, and the passage from c. 10 cited at p. 366, n. 1; *ibid.* viii. 1, 1042, a, 29: *τρίτον δὲ τὸ ἐκ τούτων* [form and matter], *οὗ γένεσις μόνου καὶ φθορά ἐστι*; c. 3, 1043, b, 10: *οὐδὲ δὴ ὁ ἄνθρωπός ἐστι τὸ ζῷον καὶ δίπουν, ἀλλά τι δεῖ εἶναι ὃ παρὰ ταῦτά ἐστιν, εἰ ταῦθ' ὕλη . . . ἡ οὐσία· ὃ ἐξαιροῦντες τὴν ὕλην λέγουσιν. εἰ οὖν τοῦτ' αἴτιον τοῦ εἶναι καὶ οὐσίας* [so BONITZ], *τοῦτο αὐτὴν ἂν τὴν οὐσίαν λέγοιεν. ἀνάγκη δὴ ταύτην ἢ ἀΐδιον εἶναι ἢ φθαρτὴν ἄνευ τοῦ φθείρεσθαι καὶ γεγονέναι ἄνευ τοῦ γίγνεσθαι . . . τὸ εἶδος οὐδεὶς ποιεῖ οὐδὲ γεννᾷ, ἀλλὰ ποιεῖται τόδε γίγνεται δὲ τὸ ἐκ τούτων*; c. 5 *init.*: *ἐπεὶ δ' ἔνια ἄνευ γενέσεως καὶ φθορᾶς ἔστι καὶ οὐκ ἔστιν, οἷον αἱ στιγμαί, εἴπερ εἰσίν, καὶ ὅλως τὰ εἴδη καὶ αἱ μορφαί, οὐ γὰρ τὸ λευκὸν γίγνεται, ἀλλὰ τὸ ξύλον λευκόν.* Cf. pp. 341 sqq., and notes there.

certainty goes on, until we cease to wonder that Aristotle's doctrine of Matter and Form, Particular and Universal, received the most various interpretations and supported the most contradictory assertions not only among the Greek Peripatetics but also and to a far greater extent among the logicians of the Middle Ages.

Yet the doctrine is of vital importance to the System. Aristotle finds the best solution of the difficulties which perplexed earlier philosophers in his distinction between Form and Matter, Potential and Actual. By means of this distinction he explains how Unity can also be Multiplicity; how the Genus and Differences form one Concept; how the many Individuals constitute one Species; how Soul and Body make one Being.[1] It is this alone which enables him to solve the problem of Becoming, over which Plato as well as all others had stumbled. Indeed, the distinction of which we are speaking serves especially, as has been seen, for the elucidation of this problem. Form and Matter being related to each other as Actual and Potential, they are in a position of essential correlation; the notion of the Potential implies the possibility of its becoming Actual; the notion of the Actual implies that it is the Actuality of the Potential. Everything that is to become actual must be potential; and conversely everything that is potential must at some time or other become actual, since what is never to be actual cannot be called potential.[2] Nor does Aristotle mean

[1] Cf. pp. 219, n. 2, 351, n. 1, and 369, n. 5. *De An.* ii. 1, 412, b, 6, c. 2, 414, a, 19 sqq.

[2] Aristotle, indeed (*Metaph.* ix. 3) controverts the Megarian assertion that a thing is potential only so long as it is actual; but he forbids us also to say (*ibid.* c. 4 *init.*) ὅτι δυνατὸν μὲν τοδὶ οὐκ ἔσται δὲ, since this could only

by Potentiality any mere logical or formal but also real Potentiality. Matter is in itself or in its capacity that whereof the Actuality is Form; and consequently Matter of itself implies Form, requires Form, owns a natural inclination or longing (as Aristotle expresses it) for it, is provoked by it to move and develop itself.[1] On the other hand Form is that which gives completeness to Matter by realising its potential capacities; it is the Energy or Entelechy of Matter.[2] But the

be said of that which by its very nature could not be: but this could not be potential, and he therefore denies (as was pointed out at p. 366, n. 1) that in things of eternal duration there can be any potentiality without actuality.

[1] Cf. the passage, *Phys.* 1, 9, quoted p. 344, n. 1. Matter is said by nature ἐφίεσθαι καὶ ὀρέγεσθαι τοῦ θείου καὶ ἀγαθοῦ καὶ ἐφετοῦ, and this is the principle upon which we must explain the movement of the world by God and of the body by the soul. Cf. such expressions as *Metaph.* xii. 7, 1072, b, 3: κινεῖ ὡς ἐρώμενον; *ibid.* a, 26: τὸ ὀρεκτὸν καὶ τὸ νοητὸν κινεῖ οὐ κινούμενον. The longing referred to is no conscious desire, but a mere natural impulse, and is frequently referred to by Aristotle as the cause of the natural movements of bodies. Thus (*Phys.* ii. 1, 192, b, 18) we are told: a work of art οὐδεμίαν ὁρμὴν ἔχει μεταβολῆς ἔμφυτον, whereas the product of nature has. Cf. *Metaph.* v. 23, 1023, a, 8, where κατὰ τὴν αὑτοῦ φύσιν and κατὰ τὴν αὑτοῦ ὁρμὴν are parallel phrases; *Anal. Post.* ii. 11, 94, b, 37, where inner necessity, ἀνάγκη κατὰ τὴν φύσιν καὶ ὁρμήν, is distinguished from compulsion, ἀνάγκη παρὰ τὴν ὁρμήν, and the falling of a stone quoted as an example of the former (similarly *Metaph.* v. 5, 1015, a 26, b, 1, c. 23, 1023, a, 17 sq., xii. 7, 1072, b, 12; cf. HERTLING, *Mat. u. Form*, 91). Nevertheless we cannot but recognise in the use of these expressions the psychological analogy from which the terminology is borrowed, reminding us as it does of the earlier hylozoism.

[2] Aristotle as a rule makes no distinction between these two terms (see TRENDELENBURG, *De An.* 296 sq.; SCHWEGLER, *Arist. Metaph.* iv. 221 sq., 173 sq.; BONITZ, *Ind. Arist.* 253, b, 35 sqq., also p. 348, n. *supra*), and if he seems to do so in individual passages, yet is the distinction of each from the other so loosely defined that in different passages the same is assigned to both. Thus motion is usually called the entelecheia of matter, the soul the entelecheia of the body (cf. *Phys.* iii. 1, 200, b, 26, 201, a, 10, 17, 28, 30, b, 4; viii. 1, 251, a, 9; *De An.* ii. i. 412, a, 10, 21, 27, b, 5, 9, 28, 413, a, 5 sqq., c. 4,

Entelechy of Matter or the actualisation of Potentiality is Motion.[1] The correlation therefore of Form and Matter leads us to consider Motion and its Causes.

### (3) *Motion and the first Cause of Motion.*

Aristotle has himself explained what he meant by the definition we have quoted. Motion is the Entelechy of that which exists potentially—in other words, it is

415, b, 4 sqq.); yet *Metaph.* ix. 6, 8 (1048, b, 6 sqq., cf. l. 1, 1050, a, 30 sqq.) motion is defined as energetic, and yet again (*ibid.* c. 6, 1048, b, 18 sqq.) it is said to differ from energy as the incomplete from the complete, so that only such activity as contains its own end in itself, *e.g.* sight, thought, life, happiness, is called energeia, while on the other hand that which is subordinate to an end outside itself and ceases with its attainment, *e.g.* building, walking, &c., is called motion. (On these two kinds of activities, *v.* also c. 8, 1050, a, 23 sqq.) *Metaph.* ix. 3, 1047, a, 30 again seems to appropriate ἐντελέχεια to the state of completion, ἐνέργεια to the activity directed to its attainment, or to motion (δοκεῖ γὰρ ἐνέργεια μάλιστα ἡ κίνησις εἶναι), and so c. 8, 1050, a, 22. Also *De An.* ii. 5, 417, b, 4, 7, 10, 418, a, 4, ἐντελέχεια stands for the completed state. (That *Metaph.* xi. 9, 1065, b, 16, 33, repeatedly uses ἐνέργεια where *Phys.* iii. 1 has ἐντελέχεια, is of no importance, on account of the spuriousness of the former passage.) Elsewhere motion is called ἐνέργεια ἀτελής, ἐν. τοῦ ἀτελοῦς, and as such is distinguished from the ἁπλῶς ἐνέργεια τοῦ τετελεσμένου (cf. n. 1 at p 383 *infra*). But ἐντελέχεια is used also in this sense, *e.g. De An.* ii. 5, 417, a, 28, and the same expression occurs *Metaph.* xii. 8, 1074, a, 35, c. 5, 1071, a, 36, as applied to the pure, immaterial form, viz. God. *Phys.* iii. 3 *init.* the action of the moving cause is called ἐνέργεια, the change effected in that which is moved ἐντελέχεια, a use which seems quite proper, as the latter and not the former is brought to completion by motion; yet in the passage that follows ἐντελέχεια is used of both, and in *Metaph.* ix. 8, 1030, a, 30 sqq. it is said, with reference to the two kinds of activities distinguished above: in the case of those whose end is outside of themselves, the energeia is in that which is moved; in the case of the others, in that which acts. It is therefore impossible to point to any fixity in the language used to express the distinction between these two terms.

[1] *Phys.* iii. 1, 201, a, 10, b, 4: ἡ τοῦ δυνάμει ὄντος ἐντελέχεια ᾗ τοιοῦτον, κίνησίς ἐστιν . . . ἡ τοῦ δυνατοῦ, ᾗ δυνατὸν, ἐντελέχεια φανερὸν ὅτι κίνησίς ἐστιν; c. 2, 202, b, 7: ἡ κίνησις ἐντελέχεια τοῦ

the process by which that which existed previously only in capacity is brought to reality, the determination of Matter by Form, the transition from Potentiality to Actuality.[1] The movement of building, for example, consists in fashioning the materials of which a house can be made, into an actual house. But motion is the entelechy of potential existence only *qua* potential and not in any other relation. The movement of the brass, for instance, out of which a statue is cast, does not concern it in so far as it is brass—for *qua* brass it remains unaltered and has always had a certain sort of actuality—but only in so far as it contains the potentiality of being made into a statue.[2] This distinction, however, can, it

κινητοῦ ᾗ κινητόν; viii. 1, 251, a, 9: φαμὲν δὴ τὴν κίνησιν εἶναι ἐντελέχειαν τοῦ κινητοῦ ᾗ κινητόν. So *Metaph.* xi. 9, 1065, b, 16, 33; see preceding note.

[1] That only this transition and not the condition attained by means of it, only the process of actualisation, not the actuality, is meant by the expression entelecheia or energeia is obvious not less from the nature of the case itself than from the repeated description of motion as an uncompleted energy or entelechy (see pp. 383, n. 1, 379, n. 2). The same distinction elsewhere occurs. Pleasure, *e.g.*, is said not to be a movement, because a movement is at each moment incomplete, whereas pleasure is complete. The former is the pursuit, the latter the attainment, of the end, a result of the completed activity. *Eth. N.* x. 3, 4, vii. 13, 1153, a, 12.

[2] In this way the previously quoted definition is explained, *Phys.* iii. 1, 201, a, 9, sqq. (and therefore *Metaph.* xi. 9, 1065, b, sqq.). BRENTANO'S explanation (*Von der mannigf. Bedeutung des Seienden nach Arist.* p. 58), according to which motion is the actuality which transforms a potential being into 'this potential being,' or 'which constitutes or forms a potential as potential,' is without support either in Aristotle's use of terms or in actual fact. For, in the first place, the entelechy of the δυνάμει ὂν is not that by which the δυν. ὂν first comes into being; and, in the second place, when, *e.g.*, the bronze which is potentially a statue is formed into the statue, its κίνησις does not consist in its becoming δυνάμει ἀνδριάς, *i.e.* bronze. Aristotle, however, has stated the meaning of his definition unambiguously in the passage immediately following, and so has the author of *Metaph.* xi. 9.

is clear, be only applied to the case of special or particular movement; for such movement is always carried on in material that has already an actuality of some sort of its own. If, on the other hand, we take the *general* notion of movement, it may be defined as the process by which Potentiality is actualised, the development of Matter by Form, since the material *qua* material is mere Potentiality which has not yet in any respect arrived at Actuality. This definition includes all Alteration of every kind, all coming into being and destruction. It does not, however, apply to absolute origination and annihilation, for this would necessitate the birth or destruction of matter, which is never assumed by Aristotle.[1] It follows from what we have said, that when he refuses to regard becoming and decaying as forms of motion, maintaining that though every motion is change, all change is not motion[2]—this distinction must be accepted as a relative one which does not hold of the general idea of motion; and so Aristotle himself on other occasions[3] employs motion and change as synonymous terms. The doctrine, however, of the different kinds of motion belongs to Physics.

We have seen that motion is intermediate between potential and actual being; it is Potentiality struggling into Actuality, and Actuality not yet freed from Potentiality—in other words, imperfect Actuality. It is distinguished from mere Potentiality by being an Entelechy, and from an Energy in its strictest sense by the fact that in Energy the activity which is directed

[1] See pp. 341 sqq. *supra*.

[2] *Phys.* v. 1, 225, a, 20, 34, and *passim*; see *infra*.

[3] *E.g. Phys.* iii. 1, 201, a, 9 sqq. c. 2 *init.* iv. 10 *fin.* viii. 7, 261, a, 9, and *passim*.

to an object has also attained its object—thought, for instance, is both a process of search and also a mental possession of the object of thought—whereas motion ceases in the attainment of the object, and is therefore only an unaccomplished effort.[1] Hence each particular motion is a transition from one state of being into an opposite—from that which a thing ceases to be into that which it has to become. Where there is no opposite, there is also no change.[2] Consequently all motion implies two principles—that which moves, and that which is moved, an actual and a potential being.

Mere Potentiality is unable to produce motion, for it lacks Energy: and so likewise is pure Actuality, since it contains nothing imperfect and undeveloped. Motion can only be conceived as the operation of the Actual or

[1] *Phys.* iii. 2, 201, b, 27: τοῦ δὲ δοκεῖν ἀόριστον εἶναι τὴν κίνησιν αἴτιον ὅτι οὔτε εἰς δύναμιν τῶν ὄντων οὔτε εἰς ἐνέργειαν ἔστι θεῖναι αὐτὴν ἁπλῶς· οὔτε γὰρ τὸ δυνατὸν ποσὸν εἶναι κινεῖται ἐξ ἀνάγκης οὔτε τὸ ἐνεργείᾳ ποσὸν, ἥ τε κίνησις ἐνέργεια μέν τις εἶναι δοκεῖ, ἀτελὴς δέ· αἴτιον δ' ὅτι ἀτελὲς τὸ δυνατὸν, οὗ ἐστὶν ἡ ἐνέργεια. It is therefore neither a στέρησις, nor a δύναμις, nor an ἐνέργεια ἁπλῆ. (So *Metaph.* xi. 9, 1066, a, 17.) VIII. 5, 257, b, 6: κινεῖται τὸ κινητόν· τοῦτο δ' ἐστὶ δυνάμει κινούμενον οὐκ ἐντελεχείᾳ· τὸ δὲ δυνάμει εἰς ἐντελέχειαν βαδίζει. ἔστι δ' ἡ κίνησις ἐντελέχεια κινητοῦ ἀτελής· τὸ δὲ κινοῦν ἤδη ἐνεργείᾳ ἐστίν. *Metaph.* ix. 6, 1048, b, 17: ἐπεὶ δὲ τῶν πράξεων ὧν ἐστὶ πέρας οὐδεμία τέλος ἀλλὰ τῶν περὶ τὸ τέλος, οἷον τοῦ ἰσχναίνειν ἡ ἰσχνασία, αὐτὰ δὲ ὅταν ἰσχναίνῃ οὕτως ἐστὶν ἐν κινήσει, μὴ ὑπάρχοντα ὧν ἕνεκα ἡ κίνησις, οὐκ ἔστι ταῦτα πρᾶξις ἢ οὐ τελεία γε· οὐ γὰρ τέλος, ἀλλ' ἐκείνῃ ἐνυπάρχει τὸ τέλος καὶ ἡ πρᾶξις . . . οὐ γὰρ ἅμα βαδίζει καὶ βεβάδικεν, οὐδ' οἰκοδομεῖ καὶ ᾠκοδόμηκεν, &c. ἑώρακε δὲ καὶ ὁρᾷ ἅμα τὸ αὐτὸ καὶ νοεῖ καὶ νενόηκεν· τὴν μὲν οὖν τοιαύτην ἐνέργειαν λέγω, ἐκείνην δὲ κίνησιν. Cf. c. 8, 1050, a, 23 sqq. and p. 379, n. 2, *supra*; *De An.* ii. 5, 417, a, 16: καὶ γὰρ ἔστιν ἡ κίνησις ἐνέργειά τις ἀτελὴς μέντοι; iii. 7, 431, a, 6: ἡ γὰρ κίνησις τοῦ ἀτελοῦς ἐνέργεια ἦν, ἡ δ' ἁπλῶς ἐνέργεια ἑτέρα ἡ τοῦ τετελεσμένου

[2] *Phys.* v. 1, 224, b. 26 sqq. 225, a, 10; *Metaph.* viii. 1, 1042, a, 32, xii. 2, 1069, a, 13: εἰς ἐναντιώσεις ἂν εἶεν τὰς καθέκαστον αἱ μεταβολαί· ἀνάγκη δὴ μεταβάλλειν τὴν ὕλην δυναμένην ἄμφω· ἐπεὶ δὲ διττὸν τὸ ὄν, μεταβάλλει πᾶν ἐκ τοῦ δυνάμει ὄντος εἰς τὸ ἐνεργείᾳ ὄν. Cf. p. 342 sqq.

Form upon the Potential or Matter:[1] even in that which moves itself we always find the motive force separate from what it moves, just as in living creatures the soul is different from the body, and in the soul itself, as we shall see below, the active part is different from the passive.[2] While Becoming, therefore, is impossible without matter or potential being, some Actuality is not less indispensable as an antecedent and motive cause. Even in cases where an individual has developed itself from mere Potentiality to Actuality, and consequently the former principle precedes the latter in *it*, yet another individual must have come before it in actual existence. The organic individual is produced from seed, but the

[1] *Phys.* iii. 2 (p. 383, n. 1), viii. 5, 257, b, 8; *Metaph.* ix. 8 esp. 1050, b, 8 sqq. xii. 3; *Phys.* vii. 1: ἅπαν τὸ κινούμενον ὑπό τινος ἀνάγκη κινεῖσθαι: even in the case of that which apparently is self-moved, the material which is moved cannot be at the same time the moving cause, since if a part of it is at rest the whole of it must also be at rest; but neither can rest and movement in the self-moved be dependent on anything else. The true explanation is to be found in the above account, and *Phys.* iii. 2; *Gen et Corr.* ii. 9: neither form in itself nor matter in itself explains becoming; τῆς μὲν γὰρ ὕλης τὸ πάσχειν ἐστὶ καὶ τὸ κινεῖσθαι, τὸ δὲ ποιεῖν καὶ κινεῖν ἑτέρας δυνάμεως. See further, p. 341 sqq.

[2] See preceding note and *Phys.* iii. 4, 255, a, 12: it is impossible that a συνεχὲς καὶ συμφυὲς should be self-moved; ᾗ γὰρ ἓν καὶ συνεχὲς μὴ ἁφῇ, ταύτῃ ἀπαθές [cf. *Metaph.* ix. 1, 1046, a, 28]· ἀλλ' ᾗ κεχώρισται, ταύτῃ τὸ μὲν πέφυκε ποιεῖν τὸ δὲ πάσχειν. Nothing that is single, therefore, is self-moved, ἀλλ' ἀνάγκη διῃρῆσθαι τὸ κινοῦν ἐν ἑκάστῳ πρὸς τὸ κινούμενον οἷον ἐπὶ τῶν ἀψύχων ὁρῶμεν, ὅταν κινῇ τι τῶν ἐμψύχων αὐτά· ἀλλὰ συμβαίνει καὶ ταῦτα ὑπό τινος ἀεὶ κινεῖσθαι. γένοιτο δ' ἂν φανερὸν διαιροῦσι τὰς αἰτίας; c. 5, 257, b, 2; ἀδύνατον δὴ τὸ αὐτὸ αὑτό κινοῦν πάντῃ κινεῖν αὐτὸ αὑτό· φέροιτο γὰρ ἂν ὅλον καὶ φέροι τὴν αὐτὴν φορὰν, ἓν ὂν καὶ ἄτομον τῷ εἴδει, &c., ἔτι διώρισται ὅτι κινεῖται τὸ κινητόν, &c. (see p. 383, n. 1). Therefore, we certainly hear nothing in Aristotle of any 'Identity of Mover and Moved' (BIESE, *Phil. d. Arist.* i. 402, 7, 481) nor does the existence of something which at the same time moves and is moved (*Phys.* iii. 2, 202, a, 3 and above) in any way prove it, if the above explanations are true.

seed is contributed by another individual—the egg is not antecedent to the hen.[1] Conversely, where an actual meets with a potential being, and no obstruction from without intervenes, then the corresponding motion is necessarily produced.[2] The object in which this process takes place is the thing moved or Matter; that by which it is effected is the motive power or Form. Motion, therefore, is the common function of both, though it takes

[1] *Metaph.* ix. 8, 1049, b, 24: ἀεὶ ἐκ τοῦ δυνάμει ὄντος γίγνεται τὸ ἐνεργείᾳ ὂν ὑπὸ ἐνεργείᾳ ὄντος, οἷον ἄνθρωπος ἐξ ἀνθρώπου, μουσικὸς ὑπὸ μουσικοῦ, ἀεὶ κινοῦντός τινος πρώτου. 1050, b, 3: φανερὸν ὅτι πρότερον τῇ οὐσίᾳ ἐνέργεια δυνάμεως· καὶ ὥσπερ εἴπομεν, τοῦ χρόνου ἀεὶ προλαμβάνει ἐνέργεια ἑτέρα πρὸ ἑτέρας ἕως τῆς τοῦ ἀεὶ κινοῦντος πρώτως. xii. 3, (cited in note to p. 356, *supra*); xii. 5, 1071, b, 22 sqq. c. 6, 1072, a, 9: πρότερον ἐνέργεια δυνάμεως . . . εἰ δὲ μέλλει γένεσις καὶ φθορὰ εἶναι, ἄλλο δεῖ εἶναι ἀεὶ ἐνεργοῦν ἄλλως καὶ ἄλλως. *Gen. An.* ii. 1, 734, b, 21: ὅσα φύσει γίνεται ἢ τέχνῃ ὑπ' ἐνεργείᾳ ὄντος γίνεται ἐκ τοῦ δυνάμει τοιούτου. *Phys.* iii. 2 *fin.*: εἶδος δὲ ἀεὶ οἴσεταί τι τὸ κινοῦν, . . . ὃ ἔσται ἀρχὴ καὶ αἴτιον τῆς κινήσεως, ὅταν κινῇ, οἷον ὁ ἐντελεχείᾳ ἄνθρωπος ποιεῖ ἐκ τοῦ δυνάμει ὄντος ἀνθρώπου ἄνθρωπον. *Ibid.* c. 7; viii. 9, 265, a, 22; *Metaph.* vii. 7, c. 9 *fin.*, ix. 9 *fin.*, xii. 7, 1072, b, 30 sqq.; *De An.* ii. 4 *init.* iii. 7 *init.*; cf. also p. 355–6, *supra*.

[2] *Phys.* viii. 4, 255, a, 34 sqq. Only an apparent exception to this is introduced by *Metaph.* ix. 5, where it is said (1047, b, 35): we must distinguish between irrational and rational forces; κἀκείνας . . . ἀνάγκη, ὅταν ὡς δύνανται [under the conditions which limit their activity and passivity] τὸ ποιητικὸν καὶ τὸ παθητικὸν πλησιάζωσι, τὸ μὲν ποιεῖν τὸ δὲ πάσχειν, ἐκείνας δ' οὐκ ἀνάγκη· αὗται μὲν γὰρ [the irrational] πᾶσαι μία ἑνὸς ποιητική, ἐκεῖναι δὲ τῶν ἐναντίων, ὥστε ἅμα ποιήσει τἀναντία (so that if necessity forced this power of choice to be exercised on both alternatives, opposite effects must be produced at one and the same time). For even in the case of the latter, so soon as the choice has been made, the result necessarily follows: ὁποτέρου γὰρ ἂν ὀρέγηται κυρίως, τοῦτο ποιήσει, ὅταν ὡς δύναται ὑπάρχῃ καὶ πλησιάζῃ τῷ παθητικῷ (1048, a, 11); but the will must decide on the one side or the other, if the condition of action is to be present: for to produce opposite effects at the same time is impossible, οὐ γὰρ οὕτως ἔχει αὐτῶν τὴν δύναμιν οὐδ' ἔστι τοῦ ἅμα ποιεῖν ἡ δύναμις (l. 22). Finally, it follows also that the effect is necessarily produced when the active and passive principles are in the condition ὡς δύνανται ποιεῖν καὶ πάσχειν; and the general reasons of this have already been stated at p. 378–9.

opposite directions in each:[1] the motive power excites the latent activity in the thing moved, while the thing moved realises it for itself.[2] Aristotle conceives of the operation of the motive principle upon the thing moved as conditioned by continuous contact between them.[3]

[1] *Phys.* iii. 3, where this is discussed at length. V. 1. 224, b, 4, *ibid.* l. 25: ἡ κίνησις οὐκ ἐν τῷ εἴδει ἀλλ' ἐν τῷ κινουμένῳ καὶ κινητῷ κατ' ἐνέργειαν. vii. 3: the ἀλλοίωσις takes place only in the material thing. *De An.* iii. 2, 426, a, 2: εἰ δ' ἔστιν ἡ κίνησις καὶ ἡ ποίησις καὶ τὸ πάθος ἐν τῷ ποιουμένῳ . . . ἡ γὰρ τοῦ ποιητικοῦ καὶ κινητικοῦ ἐνέργεια ἐν τῷ πάσχοντι ἐγγίνεται. διὸ οὐκ ἀνάγκη τὸ κινοῦν κινεῖσθαι . . . ἡ ποίησις καὶ ἡ πάθησις ἐν τῷ πάσχοντι ἀλλ' οὐκ ἐν τῷ ποιοῦντι. See further p. 358–9.

[2] Cf. p. 378–9.

[3] *Phys.* iii. 2 *fin.*: ἡ κίνησις ἐντελέχεια τοῦ κινητοῦ ᾗ κινητόν· συμβαίνει δὲ τοῦτο θίξει τοῦ κινητικοῦ, ὥσθ' ἅμα καὶ πάσχει. vii. 1, 242, b, 24, vii. 2, *init.*: τὸ δὲ πρῶτον κινοῦν . . . ἅμα τῷ κινουμένῳ ἐστί· λέγω δὲ τὸ ἅμα, ὅτι οὐδέν ἐστιν αὐτῶν μεταξύ· τοῦτο γὰρ κοινὸν ἐπὶ παντὸς κινουμένου καὶ κινοῦντός ἐστιν—which is then shown to be true of all kinds of motion. *Ibid.* viii. 2, 255, a, 34, c. 1, 251, b, 1 sqq.; *Gen. et Corr.* i. 6, 322, b, 21, c. 9, 327, a, 1; *Gen. An.* ii. 1, 734, a, 3: κινεῖν τε γὰρ μὴ ἁπτόμενον ἀδύνατον; *Metaph.* ix. 5. Cf. n. 1 *supra*, and p. 387, n. 3. That this contact of the moving force with that which is moved, is conceived of by Aristotle as not merely a momentary one giving the first impulse only, but as lasting during the whole continuance of the motion, is obvious especially from his account of the motion of throwing. Here the motion of the thrown seems to continue after contact with the thrower has ceased. But this Aristotle cannot admit to be the case. He therefore assumes (*Phys.* viii. 10, 266, b, 27 sqq., 267, b, 11, cf. iv. 8, 215, a, 14; *De Insomn.* 2, 459, a, 29 sqq.) that along with the thing thrown the thrower moves also the medium through which it moves (*e.g.* the air or water) and that the motion of the thing which is moved is communicated to it from this, when it has passed from the thrower. But since this motion continues after that of the thrower has ceased, while (according to his presupposition) the motion of the medium must cease simultaneously with that of the thrower, he adopts the curious solution that the medium can still produce motion even when it has itself ceased to be moved: οὐχ ἅμα παύεται κινοῦν καὶ κινούμενον ἀλλὰ κινούμενον μὲν ἅμα ὅταν ὁ κινῶν παύσηται κινῶν, κινοῦν δὲ ἔτι ἐστίν (267, a, 5). The law of inertia, according to which motion persists until it is met by an opposing force, was not, therefore, known to him. How the natural motion of the elements, which carries each of these to its proper place, can spring from contact with a moving force, it would be hard to say. By what is said of these, however (*Phys.* viii. 4, 254, b, 33 sqq., *De Cælo*, iv. 3 *fin.*), it is

Indeed, this appears to him so necessary that he asserts even of what is absolutely incorporeal that it acts only through contact: even thought apprehends its object by touching it[1]—the latter, however, is related to the thinking subject as Form to Matter[2]—and in like manner God, as the first cause of motion, is said, as we shall shortly see, to be in contact with the world.[3] But in what sense such expressions can be used of immaterial things, Aristotle has not further explained.

It follows from this that Motion is as eternal as Form and Matter, whose essential correlation it represents,[4] and that it has neither beginning nor end.[5] For if it had a beginning, the *movens* and the *motum* must either have existed before this beginning or not. If they did not exist, they must have come into being, and so a movement would have taken place before the first motion. If they did exist, we cannot suppose that they were at rest, since it was of their very nature to move. But if it be granted that they did move, some active force must have operated to endow them

not proved even that they are moved by anything else at all.

[1] Cf. p. 203, n. 3.

[2] *Metaph.* xii. 9, 1074, b, 19, 29; *De An.* iii. 4, 429, b, 22, 29 sqq.

[3] *Gen. et Corr.* i. 6, 322, b, 21: nothing can affect another without being in contact with it, and in the case of things which at the same time move and are moved, this contact must be mutual (323, a, 20 sqq.); *ἔστι δ' ὡς ἐνίοτέ φαμεν τὸ κινοῦν ἅπτεσθαι μόνου τοῦ κινουμένου, τὸ δ' ἁπτόμενον μὴ ἅπτεσθαι ἁπτομένου* [that which touches is not touched by anything which touches it again] . . . *ὥστε εἴ τι κινεῖ ἀκίνητον ὄν, ἐκεῖνο μὲν ἂν ἅπτοιτο τοῦ κινητοῦ, ἐκείνου δὲ οὐδέν· φαμὲν γὰρ ἐνίοτε τὸν λυποῦντα ἅπτεσθαι ἡμῶν, ἀλλ' οὐκ αὐτοὶ ἐκείνου.* That this, however, is no more than a play upon words is obvious.

[4] See p. 341, n. 2, 345, n. 1.

[5] With what follows, cf. SIEBECK, *Die Lehre d. Ar. v. d. Ewigkeit d. Welt* (*Untersuch z. Phil. d. Griechen* Halle, 1873, pp 137–189).

with the property of motion, and thus we should in this case also arrive at a movement before motion. It is equally impossible to conceive of motion as destructible. The cessation of a movement is always conditioned by another movement which puts an end to the first. As in the former argument we were forced to admit a process of change antecedent to the first, so here we cannot escape one subsequent to the last.[1] Motion is therefore without beginning or end; the world was never created and it will never perish.[2]

Yet, although Motion from this point of view is infinite, there is another aspect in which it has its limitation. Since every motion presupposes a motive principle, it follows that the idea of motion in general involves the assumption of a first motive force which is not moved by anything else. Without this assumption we should be involved in an infinite series of moving causes, which could never produce actual motion, because they would never bring us to a first cause—and without

[1] The above account contains the essence of the discussion in *Phys.* viii. 1. That motion must be eternal is also asserted in *Metaph.* xii. 6, 1071, b, 6: *ἀλλ' ἀδύνατον κίνησιν ἢ γενέσθαι ἢ φθαρῆναι· ἀεὶ γὰρ ἦν.* Further, if Time is without beginning and end (on this see *infra*, p. 406, &c.) motion must be so also, since Time, as we shall find, cannot be conceived of apart from motion. Cf. *Phys.* viii. 1, 251, b, 12: *εἰ δή ἐστιν ὁ χρόνος κινήσεως ἀριθμὸς ἢ κίνησίς τις, εἴπερ ἀεὶ χρόνος ἐστὶν, ἀνάγκη καὶ κίνησιν ἀΐδιον εἶναι*, and after proving the infinity of time in both directions he goes on at l. 26: *ἀλλὰ μὴν εἴγε χρόνον, φανερὸν ὅτι ἀνάγκη εἶναι καὶ κίνησιν, εἴπερ ὁ χρόνος πάθος τι κινήσεως.* With reference apparently to this passage, *Metaph.* xii. 6 proceeds: *οὐδὲ χρόνον· οὐ γὰρ οἷόν τε τὸ πρότερον καὶ ὕστερον εἶναι μὴ ὄντος χρόνου. καὶ ἡ κίνησις ἄρα οὕτω συνεχὴς ὥσπερ καὶ ὁ χρόνος· ἢ γὰρ τὸ αὐτὸ ἢ κινήσεώς τι πάθος.* The same inference follows from the statement (*Phys.* vi. 6, 236, b, 32 sqq.; *Metaph.* ix. 8, 1050, b, 3) that every change and process presupposes a previous one.

[2] In this form, viz. the question as to the eternity of the world, the present subject will recur in Ch. IX. *infra*.

that, none of the succeeding causes could operate. This conclusion cannot be avoided by presuming that the object moved produces its own motion, since it is necessary for the motive force already to be what the object moved is to become:[1] and hence the same thing cannot at the same time and in the same relation be both moved and moving. We are forced, therefore, to admit a *primum mobile*. That principle, again, might be either something moved and therefore something self-moving, or something unmoved. The first of these cases, however, resolves itself into the second, for even in a self-impelling substance the motive force must of necessity be different from what it moves. Consequently there must be an Unmoved Substance, which is the cause of all motion.[2] Or—as this is elsewhere more briefly demonstrated—since all motion must start from a motive principle, a motion which has no beginning presupposes a motive principle which is as eternal as the motion itself, and which, as the presupposition of all motion, must be itself unmoved.[3] Thus, then, we obtain three elements: that which merely is moved and never causes motion, = Matter; that which both causes motion and is itself moved, = Nature; that which causes motion without itself being moved, = God.[4]

Our previous pages will have shown that this position

[1] Cf. p. 384, *supra*.

[2] *Phys.* viii. 5, cf. vii. 1 and ii. (a), 2, where it is agreed that neither efficient nor formal nor even final causes permit of a *regressus ad infinitum*.

[3] *Metaph.* xii. 6, 1071, b, 4: ἀνάγκη εἶναί τινα ἀΐδιον οὐσίαν ἀκίνητον. αἵ τε γὰρ οὐσίαι πρῶται τῶν ὄντων, καὶ εἰ πᾶσαι φθαρταί, πάντα φθαρτά. ἀλλ' ἀδύνατον κίνησιν ἢ γενέσθαι ἢ φθαρῆναι· ἀεὶ γὰρ ἦν. c. 7, 1072, a, 21: ἔστι τι ἀεὶ κινούμενον κίνησιν ἄπαυστον . . . ἔστι τοίνυν τι καὶ ὃ κινεῖ.

[4] *Phys.* viii. 5, 256, b, 20; *Metaph.* xii. 7, 1072, a, 24 (as emended by BONITZ); *De An.* iii. 10, 433, b, 13.

is not an isolated one in Aristotle's philosophy. Actuality in the highest sense is synonymous with Pure Form devoid of Matter—the Absolute Subject which as perfect Form is at once the motive force and the end of the Universe.[1] The gradations of existence, ascending from the first formless Matter, reach their consummation in God. And this thesis actually formed the starting-point for a demonstration of the existence of God in Aristotle's treatise on Philosophy.[2] In the same work he deduced the belief in the gods from two principles—from reflection upon self-revealing traces of the divine nature in the presentiments of the soul and from the contemplation of the heavens.[3] A well-known fragment shows what stress he laid upon the witness of beauty and order in the universe to the existence of God.[4] Nor are these arguments without their justifi-

[1] Cf. pp. 355, &c., and the passages quoted, pp. 395 sqq., on God as highest form, pure energy and supreme end. *Metaph.* xii. 7, 1072, a, 35: *ἔστιν ἄριστον ἀεὶ* [in every sphere of being] *ἢ ἀνάλογον τὸ πρῶτον.*

[2] SIMPL. *De Cælo*, 130, *Schol. in Ar.* 487, a, 6 (*Ar. Fr.* 15): *λέγει δὲ περὶ τούτου ἐν τοῖς περὶ Φιλοσοφίας* (as to which see Ch. II. *supra*) "*καθόλου γὰρ ἐν οἷς ἐστί τι βέλτιον, ἐν τούτοις ἐστί τι καὶ ἄριστον. ἐπεὶ οὖν ἐν τοῖς οὖσιν ἐστὶν ἄλλο ἄλλου βέλτιον, ἔστιν ἄρα τι καὶ ἄριστον, ὅπερ εἴη ἂν τὸ θεῖον.*"

[3] *Fr.* 13, b, SEXT. *Math.* ix. 20: *Ἀριστοτέλης δὲ ἀπὸ δυοῖν ἀρχῶν ἔννοιαν θεῶν ἔλεγε γεγονέναι ἐν τοῖς ἀνθρώποις, ἀπό τε τῶν περὶ τὴν ψυχὴν συμβαινόντων καὶ ἀπὸ τῶν μετεώρων. ἀλλ' ἀπὸ μὲν τῶν περὶ τὴν ψυχὴν συμβαινόντων διὰ τοὺς ἐν τοῖς ὕπνοις γινομένους ταύτης ἐνθουσιασμοὺς καὶ τὰς μαντείας. ὅταν γάρ, φησίν, ἐν τῷ ὑπνοῦν καθ' ἑαυτὴν γένηται ἡ ψυχή, τότε τὴν ἴδιον ἀπολαβοῦσα φύσιν προμαντεύεταί τε καὶ προαγορεύει τὰ μέλλοντα. τοιαύτη δέ ἐστι καὶ ἐν τῷ κατὰ τὸν θάνατον χωρίζεσθαι τῶν σωμάτων.* So Homer represents Patroclus and Hector as prophesying at death. *ἐκ τούτων οὖν, φησίν, ὑπενόησαν οἱ ἄνθρωποι εἶναί τι θεὸν τὸ καθ' ἑαυτὸν* [-ὸ] *ἐοικὸς τῇ ψυχῇ καὶ πάντων ἐπιστημονικώτατον. ἀλλὰ δὴ καὶ ἀπὸ τῶν μετεώρων· θεασάμενοι γὰρ μεθ' ἡμέραν μὲν ἥλιον περιπολοῦντα, νύκτωρ δὲ τὴν εὔτακτον τῶν ἄλλων ἀστέρων κίνησιν, ἐνόμισαν εἶναί τινα θεὸν τὸν τῆς τοιαύτης κινήσεως καὶ εὐταξίας αἴτιον.*

[4] In the brilliant *Fr.* 14 (prob. also from the Π. *φιλοσοφίας* in

cation in his system, although there are, no doubt, certain points of them which must be interpreted in the light of a less rigid logic, or perhaps referred to an earlier form of his teaching more akin to Platonism. Presentiments which exhibit themselves in prophetic dreams and inspired states of feeling are only an obscure manifestation of the force which under the form of the Active Understanding unites the human and the divine intelligence.[1] The beauty of the world, the harmonious connection of its parts, the purpose observable in their arrangement, the splendour of the stars, and the inviolable order of their motions, point not only to astral spirits (in whom we shall have hereafter to recognise the guiding forces of the heavenly spheres), but also to a Being placed far above them, from whom alone the simple movement of the universe and the harmony between the whole and all the parts proceed.[2] Conse-

CIC. *N. D.* ii. 37, 95, which reminds us at the beginning, of Plato's picture of the dwellers in the cave (*Rep.* vii. *init.*): 'si essent, qui sub terra semper habitavissent . . . accepissent autem fama et auditione, esse quoddam numen et vim Deorum: deinde aliquo tempore, patefactis terræ faucibus, ex illis abditis sedibus evadere in hæc loca, quæ nos incolimus, atque exire potuissent: cum repente terram et maria cœlumque vidissent, nubium magnitudinem ventorumque vim cognovissent adspexissentque solem ejusque tum magnitudinem pulchritudinemque tum etiam efficientiam cognovissent, quod is diem efficeret toto cœlo luce diffusa: cum autem terras nox opacasset, tum cœlum totum cernerent astris distinctum et ornatum lunæque luminum varietatem tum crescentis tum senescentis eorumque omnium ortus et occasus atque in omni æternitate ratos immutabilesque cursus: haec cum viderent profecto et esse Deos et haec tanta opera Deorum esse arbitrarentur.' According to CIC. *N. D.* ii. 49, 125, Aristotle seems to have pointed to the instinct of animals as a teleological argument for the being of God.

[1] For the fuller discussion of this see *infra*.

[2] Besides the passage from *De Cœlo*, i. 9 quoted *infra*, in n. 6 at p. 395, cf. *Metaph.* xii. 7, 1072, a,

quently the arguments which Aristotle puts forward, in the passages indicated, to prove the existence of God, though based, like those of Socrates and Plato,[1] upon teleological principles—as well as the identification which he elsewhere establishes between the force of nature working to fixed ends and God[2]—are not a mere adaptation of his views to unscientific notions, but are in harmony with the spirit of his whole system. The

35 sqq., where God is described as the ἄριστον or οὗ ἕνεκα, and as thus the efficient cause of motion in the world; but especially c. 10, where the question is discussed: ποτέρως ἔχει ἡ τοῦ ὅλου φύσις τὸ ἀγαθὸν καὶ τὸ ἄριστον, πότερον κεχωρισμένον τι καὶ αὐτὸ καθ' αὐτὸ, ἢ τὴν τάξιν, ἢ ἀμφοτέρως, ὥσπερ στράτευμα. In the case of an army the good resides as well in the general as in the order of the whole: in the former, however, in a still more primary sense than in the latter. The universe is compared to an army: πάντα δὲ συντέτακταί πως, ἀλλ' οὐχ ὁμοίως, καὶ πλωτὰ καὶ πτηνὰ καὶ φυτά· καὶ οὐχ οὕτως ἔχει, ὥστε μὴ εἶναι θατέρῳ πρὸς θάτερον μηθὲν, ἀλλ' ἐστί τι. πρὸς μὲν γὰρ ἓν ἅπαντα συντέτακται, except that each creature is more fully subject to this order just in proportion to the nobility of its nature, even as in a household the freeborn are subjected to a stricter discipline than the slaves. τοιαύτη γὰρ ἑκάστου ἀρχὴ αὐτῶν ἡ φύσις ἐστίν. λέγω δ' οἷον εἴς γε τὸ διακριθῆναι ἀνάγκη ἅπασιν ἐλθεῖν, καὶ ἄλλα οὕτως ἐστὶν ὧν κοινωνεῖ ἅπαντα εἰς τὸ ὅλον. All other systems are founded of necessity upon the opposite principle: Aristotle's is the only exception, οὐ γάρ ἐστιν ἐναντίον τῷ πρώτῳ οὐθέν (1075, b, 21, 24). If, like Speusippus, we accept a whole series of primary principles we destroy the unity of all being (see the passage, Div. I. p. 854, 1); τὰ δὲ ὄντα οὐ βούλεται πολιτεύεσθαι κακῶς. "οὐκ ἀγαθὸν πολυκοιρανίη· εἷς κοίρανος ἔστω." Cf. xiv. 3, 1090, b, 19, where he is again attacking Speusippus: οὐκ ἔοικε δ' ἡ φύσις ἐπεισοδιώδης οὖσα ἐκ τῶν φαινομένων, ὥσπερ μοχθηρὰ τραγῳδία. We have the same point of view in *Fr.* 16, preserved to us only by an unknown scholiast, where Aristotle says: given several ἀρχαὶ, they must be either ordered or disordered. But the latter is impossible, since from disorder no natural order, no κόσμος, could have arisen; εἰ δὲ τεταγμέναι, ἢ ἐξ ἑαυτῶν ἐτάχθησαν ἢ ὑπὸ ἔξωθεν τινὸς αἰτίας; but even in the former case ἔχουσί τι κοινὸν τὸ συνάπτον αὐτὰς κἀκεῖνο ἡ ἀρχή. The comparison of the order of the world with that of an army is further developed in Sext. *Math.* ix. 26 sq., which perhaps follows Aristotle Περὶ φιλοσοφίας.

[1] See Div. i. p. 143 sq. 786 (Zeller's *Plato*, Eng. Tr. p. 281 sqq. 485).

[2] *De Cœlo*, i. 4 *fin.*: ὁ θεὸς καὶ ἡ φύσις οὐδὲν μάτην ποιοῦσιν.

unity of the world and its adaptation to fixed ends can only be explained by the unity of the Supreme Cause. It is not without good reason, also, that Aristotle in his most important treatises connected the proof of the reality of the Supreme Being with his theory of motion: for this is the point at which the Changeable is seen most directly to lean upon an Unchangeable, as itself the condition of all change.

The further characteristics of the Supreme Being may be determined from what has gone before. Motion being eternal, it must be continuous (συνεχὴς), and so it must be one and the same throughout. But such a single motion is the product of a single *mobile* and a single *motum*. Hence the *primum mobile* is single and is as eternal as motion itself.[1] In the next place what has been said about the continuity and uniformity of motion implies that this motive principle is absolutely unmoved; since that which is moved, being itself subject to change, cannot impart an unbroken and uniform movement,[2] and consequently it is of the essence of the *primum mobile* to exclude the possibility of change.[3] It is unchangeable and absolutely necessary; and this unconditional necessity is the law by

[1] *Phys.* viii. 6, 259, a, 13; *Metaph.* xii. 8, 1073, a, 23 sqq., where in connection with the πρώτη ἀΐδιος καὶ μία κίνησις, that of the fixed stars, it is shown how single motion presupposes a single moving cause. Cf. p. 391, n. 2. On the constancy and unity of motion we shall have more to say in the next chapter.

[2] *Phys.* viii. 6, 259, b, 22, c. 10, 267, a, 24 sqq.

[3] In *Fr.* 15 (preserved to us by SIMPL. *De Cœlo*, 130, 45, K., *Schol. in Ar.* 487, a, 6), from the treatise Π. φιλοσοφίας, the immutability of God is proved on the ground that the κράτιστον can neither suffer change from anything else nor feel in itself the need of any such change. (It must be granted to BERNAYS, *Dial. d. Arist.* 113, and HEITZ, *Ar. Fragm.* p. 37, that

which the universe is held together.[1] It is further involved in this that it is incorporeal. Only that is indestructible which cannot possibly cease to be; on the other hand all that is merely potential is by nature destructible;[2] only that can operate as *primum mobile* in which there is no element of unrealised possibility.[3] But the Potential is necessarily material. A Being that contains in itself nothing that is merely potential must

this amplification also belongs to the Aristotelian fragment. The passage in PLATO'S *Republic*, ii. 380, D sqq., as Simpl. remarked, served as the original of it.) The same reason is assigned also in the *De Cœlo*, i. 9 (see p. 395, n. 6) for the immutability of God, and in *Metaph.* xii. 9, 1074, b, 26, for the doctrine that God must always think the same thing; cf. p. 397, n. 2.

[1] *Metaph.* xii. 7, 1072, b, 7: ἐπεὶ δ' ἐστί τι κινοῦν αὐτὸ ἀκίνητον ὂν, ἐνεργείᾳ ὂν, τοῦτο οὐκ ἐνδέχεται ἄλλως ἔχειν οὐδαμῶς ... ἐξ ἀνάγκης ἄρα ἐστὶν ὄν· καὶ ῃ ἀνάγκῃ καλῶς [*i.e.* in so far as it is necessary it is good, since, as is immediately explained, its necessity is neither external nor merely relative, but absolute—μὴ ἐνδεχόμενον ἄλλως, ἀλλ' ἁπλῶς ἀναγκαῖον] . . . ἐκ τοιαύτης ἄρα ἀρχῆς ἤρτηται ὁ οὐρανὸς καὶ ἡ φύσις.

[2] After showing that the ἐνέργεια precedes the δύναμις in all the three respects of λόγῳ, χρόνῳ and οὐσίᾳ Aristotle goes on, *Metaph.* ix. 8, 1050, b, 6 (following immediately on the passage quoted at p. 385, n. 1): ἀλλὰ μὴν καὶ κυριωτέρως [actuality has a higher reality than the δύναμις]. τὰ μὲν γὰρ ἀΐδια πρότερα τῇ οὐσίᾳ τῶν φθαρτῶν, ἔστι δ' οὐθὲν δυνάμει ἀΐδιον. This he then goes on to prove. That which is merely potential can both be and not be. τὸ δ' ἐνδεχόμενον μὴ εἶναι φθαρτὸν, ἢ ἁπλῶς, ἢ τοῦτο αὐτὸ [relatively to that], ὃ λέγεται ἐνδέχεσθαι μὴ εἶναι [the former, if I say, 'it is possible for A not to be;' the latter, if I say, 'it is possible for A not to be in this place, or not to be so great, or not to have this quality'] . . . ἁπλῶς δὲ τὸ κατ' οὐσίαν [but that is absolutely perishable whose substance can cease to be]. οὐθεν ἄρα τῶν ἀφθάρτων ἁπλῶς δυνάμει ἐστὶν ὂν ἁπλῶς . . . οὐδὲ τῶν ἐξ ἀνάγκης ὄντων.

[3] *Metaph.* xii. 6, 1071, b, 12: if there were a κινητικὸν which did not realise itself in action there would be no eternal uninterrupted motion; ἐνδέχεται γὰρ τὸ δύναμιν ἔχον μὴ ἐνεργεῖν. But this would be equally true, εἰ ἐνεργήσει ἡ δ' οὐσία αὐτῆς δύναμις· οὐ γὰρ ἔσται κίνησις ἀΐδιος· ἐνδέχεται γὰρ τὸ δυνάμει ὂν μὴ εἶναι. δεῖ ἄρα εἶναι ἀρχὴν τοιαύτην ἧς ἡ οὐσία ἐνέργεια. The leading thought of this proof (ἐνδέχεσθαι ἢ εἶναι οὐδὲν διαφέρει ἐν τοῖς ἀϊδίοις) Aristotle states also *Phys.* iii. 4, 203, b, 30, and he shows in *Metaph.* ix. 4 that it is inadmissible to say,

be immaterial and therefore incorporeal.[1] Only the incorporeal can be unchangeable; [2] on the other hand, everything which has a material side is subject to motion and change,[3] and can alter its state.[4] Moreover all bodies have magnitude, and magnitude is always limited. But the limited cannot possibly produce an infinite activity like eternal motion, for its power is just as surely limited as that of the infinite is illimitable.[5] It follows that the *primum mobile* must be absolutely incorporeal, indivisible and unconditioned by space, motionless, passionless, changeless: in a word, it must be absolute Reality and pure Energy.[6]

ὅτι δυνατὸν μὲν τοδί, οὐκ ἔσται δέ, from which it immediately follows that we can never say of anything which by its very nature *can* cease to be, that it *will never* cease to be; and consequently it cannot be of the nature of that which never ceases to be (the ἀΐδιον).

[1] Cf. p. 347 sq. and *Metaph.* xii. 6, 1071, b, 20: ἔτι τοίνυν ταύτας δεῖ τὰς οὐσίας εἶναι ἄνευ ὕλης. ἀϊδίους γὰρ δεῖ, εἴ πέρ γε καὶ ἄλλο τι ἀΐδιον. ἐνεργείᾳ ἄρα.

[2] After what has been said above, this does not require any further proof. All change is a transition from possibility to actuality, which is only precluded where there is no matter, and therefore no δυνάμει ὄν. Cf. (besides p. 359 sqq.) the proof in *Phys.* vi. 4, that everything which changes must be divisible. We shall thus find also that the soul is in essence unmoved.

[3] *Phys.* viii. 6, 259, b, 18. Cf. preceding n. and p. 366, n. 1.

[4] See p. 394, n. 3, and *Metaph.* vii. 7, 1032, a, 20, c. 10, 1035, a, 25.

[5] *Phys.* viii. 10, 266, a, 10 sqq. 267, b, 17.; *Metaph.* xii. 7 *fin.*

[6] *Metaph.* xii. 7 (see p 394, n. 1, *supra*), c. 8, 1074, a, 35; cf. preceding and following n. *De Cœlo*, i. 9, 279, a, 16: ἔξω δὲ τοῦ οὐρανοῦ δέδεικται ὅτι οὔτ' ἔστιν οὔτε ἐνδέχεται γενέσθαι σῶμα. φανερὸν ἄρα ὅτι οὔτε τόπος οὔτε κενὸν οὔτε χρόνος ἐστὶν ἔξωθεν· διόπερ οὔτ' ἐν τόπῳ τἀκεῖ πέφυκεν, οὔτε χρόνος αὐτὰ ποιεῖ γηράσκειν. οὐδ' ἐστὶν οὐδενὸς οὐδεμία μεταβολὴ τῶν ὑπὲρ τὴν ἐξωτάτω τεταγμένων φοράν, ἀλλ' ἀναλλοίωτα καὶ ἀπαθῆ τὴν ἀρίστην ἔχοντα ζωὴν καὶ τὴν αὐταρκεστάτην διατελεῖ τὸν ἅπαντα αἰῶνα. After some remarks upon the expression αἰών, Aristotle proceeds: τὸ τοῦ παντὸς οὐρανοῦ τέλος καὶ τὸ τὸν πάντα χρόνον καὶ τὴν ἀπειρίαν περιέχον τέλος αἰών ἐστιν, ἀπὸ τοῦ ἀεὶ εἶναι εἰληφὼς τὴν ἐπωνυμίαν, ἀθάνατος καὶ θεῖος. ὅθεν καὶ τοῖς ἄλλοις ἐξήρτηται, τοῖς μὲν ἀκριβέστερον τοῖς δ' ἀμαυρῶς, τὸ εἶναί τε καὶ ζῆν. It is thus seen that the highest Deity (τὸ θεῖον πᾶν τὸ πρῶτον καὶ ἀκρότατον) must be unchangeable.

By a converse process, it follows that, since all multiplicity partakes of matter, the *primum mobile* and that which it moves are single.[1] The cause of all motion, or God, is therefore Pure Being, absolute Form (τὸ τί ἦν εἶναι τὸ πρῶτον), incorporeal Substance—or, in other words, is Thought. Nothing but pure self-centred thought is free from materiality, for even the soul has an essential relation to the body, and in all corporeal substances form is involved with matter. Again, perfect activity exists in thought alone. Neither constructive (ποιητική) nor practical (πρακτική) activity is perfect, since the end of both is external to themselves, and therefore they require material to work with.[2] But the Supreme Being has no end beyond itself, because it is the ultimate end of everything.[3] It is

οὔτε γὰρ ἄλλο κρεῖττόν ἐστιν ὅ τι [nom.] κινήσει . . . , οὔτ' ἔχει φαῦλον οὐθέν, οὔτ' ἐνδεὲς τῶν αὐτοῦ καλῶν οὐδενός ἐστιν. (Cf. p. 393, n. 3.) As to whether this account, indeed, was to be taken as referring to the primal mover or the primally moved (the outmost sphere) the old commentators held divided views: according to SIMPL. *in loc.*, Alexander as well as his Peripatetic predecessors, gave the preference to the second, the younger (Neoplatonic) expositors to the first explanation. Alexander's view seems to be supported by the words καὶ ἄπαυστον δὴ κίνησιν κινεῖται εὐλόγως, unless we alter κινεῖται with some of the MSS. used by Simpl. into κινεῖ; it is easy, however to supply ὁ οὐρανός as the subject, even although God is spoken of in what precedes, and that we must do so is obvious from the fact that the subject of this explanation is expressly said to be that which is ἔξω τοῦ οὐρανοῦ, ὑπὲρ τὴν ἐξωτάτω φορὰν—the incorporeal, immovable, all-embracing, the θεῖον πρῶτον καὶ ἀκρότατον, the cause of all being and life.

[1] *Metaph.* xii. 8, 1074, a, 31: ὅτι δὲ εἷς οὐρανός, φανερόν· εἰ γὰρ πλείους οὐρανοὶ ὥσπερ ἄνθρωποι, ἔσται εἴδει μία ἡ περὶ ἕκαστον ἀρχή, ἀριθμῷ δέ γε πολλαί· ἀλλ' ὅσα ἀριθμῷ πολλά, ὕλην ἔχει· εἷς γὰρ λόγος καὶ ὁ αὐτὸς πολλῶν . . . τὸ δὲ τί ἦν εἶναι οὐκ ἔχει ὕλην τὸ πρῶτον· ἐντελέχεια γάρ.

[2] Cf. p. 400, n. 1.

[3] *De Cœlo*, ii. 12, 292, b, 4: τῷ δ' ὡς ἄριστα ἔχοντι οὐθὲν δεῖ πράξεως· ἔστι γὰρ αὐτὸ τὸ οὗ ἕνεκα, ἡ δὲ πρᾶξις ἀεί ἐστιν ἐν δυσίν, ὅταν καὶ οὗ ἕνεκα ᾖ καὶ τὸ τούτου ἕνεκα.

true that in analysing Thought we separate Potentiality from Actuality—the faculty of thinking from actual Thought (*θεωρία*). But this distinction does not apply to the Deity, for his substance contains no undeveloped potentiality; and even in the case of man, it is only his finite nature which renders him incapable of uninterrupted thought. The nature of the Deity consists of unceasing sleepless contemplation and absolutely perfect activity,[1] an activity that cannot alter, since to a perfect being alteration would involve a loss of perfection.[2] God, therefore, is the absolute activity of thought, and, as such, He constitutes absolute reality and vitality and is the source of all life.[3]

What, then, are the contents or subject-matter of this Thought? All thinking derives its value from the object of thought; but the Divine Thought cannot be dependent for its validity on anything beyond itself, nor can it relate to anything except the best. But the best is

[1] *Eth. N.* x. 8, 1078, b, 20: τῷ δὴ ζῶντι τοῦ πράττειν ἀφαιρουμένου, ἔτι δὲ μᾶλλον τοῦ ποιεῖν, τί λείπεται πλὴν θεωρία; ὥστε ἡ τοῦ θεοῦ ἐνέργεια, μακαριότητι διαφέρουσα, θεωρητικὴ ἂν εἴη. καὶ τῶν ἀνθρωπίνων δὴ ἡ ταύτῃ συγγενεστάτη εὐδαιμονικωτάτη. *Metaph.* xii. 7, cf. p. 398, n. 5; c. 9, 1074, b, 28: we cannot think of the divine thought either as resting or as in a state of mere potentiality, for εἰ μὴ νόησίς [actual thought] ἐστιν, ἀλλὰ δύναμις, εὔλογον ἐπίπονον εἶναι τὸ συνεχὲς αὐτῷ τῆς νοήσεως. *Ibid.* 1075, b, 7 (following BONITZ's text): pure reason is indivisible; as is therefore the discursive thought of man (ὁ ἀνθρώπινος νοῦς ὁ τῶν συνθέτων) at isolated moments when it contemplates perfection, not in broken fragments but in its entirety: οὕτως δ' ἔχει αὐτὴ αὑτῆς ἡ νόησις τὸν ἅπαντα αἰῶνα.

[2] *Metaph.* xii. 9, 1074, b, 25: δῆλον τοίνυν ὅτι τὸ θειότατον καὶ τιμιώτατον νοεῖ καὶ οὐ μεταβάλλει· εἰς χεῖρον γὰρ ἡ μεταβολὴ καὶ κίνησίς τις ἤδη τὸ τοιοῦτον.

[3] *Metaph.* xii. 7, 1072, b, 28: φαμὲν δὲ [δὴ] τὸν θεὸν εἶναι ζῷον ἀΐδιον ἄριστον, ὥστε ζωὴ καὶ αἰὼν συνεχὴς καὶ ἀΐδιος ὑπάρχει τῷ θεῷ· τοῦτο γὰρ ὁ θεός. *De Cœlo*, ii. 3, 286, a, 9: θεοῦ δ' ἐνέργεια ἀθανασία· τοῦτο δ' ἐστὶ ζωὴ ἀΐδιος.

nothing but itself.[1] Consequently God contemplates Himself, and his thought is the thought of thought.[2] In the thought of God, therefore, as must necessarily be the case with Pure Spirit, thought and its object are identical.[3] This unalterable repose of thought upon itself—the indivisible unity of the thinking subject and the object of thought[4]—constitutes the absolute blessedness of God.[5]

[1] Still less, of course, can God be affected by any emotion from without. Hence the statement (*Eth. N.* viii. 9, 1158, b, 35, 1159, a, 4, or more definitely *Eud.* vii. 3, 12, 1238, b, 27, 1244, b, 7, 1245, b, 14, and from this treatise *M. Mor.* ii. 11, 1208, b, 27), that God does not love but is only loved, and that between Him and man there is too wide a separation to permit of mutual φιλία.

[2] *Metaph.* xii. 9, 1074, b, 17: εἴτε γὰρ μηθὲν νοεῖ, τί ἂν εἴη τὸ σεμνόν, ἀλλ' ἔχει ὥσπερ ἂν εἰ ὁ καθεύδων· εἴτε νοεῖ, τούτου δ' ἄλλο κύριον, . . . οὐκ ἂν ἡ ἀρίστη οὐσία εἴη· διὰ γὰρ τοῦ νοεῖν τὸ τίμιον αὐτῷ ὑπάρχει. ἔτι δὲ . . . τί νοεῖ; ἢ γὰρ αὐτὸς αὑτὸν ἢ ἕτερόν τι. . . . πότερον οὖν διαφέρει τι ἢ οὐθὲν τὸ νοεῖν τὸ καλὸν ἢ τὸ τυχόν; ἢ καὶ ἄτοπον τὸ διανοεῖσθαι περὶ ἐνίων; δῆλον τοίνυν . . . (as at p. 397, n. 2); further, at l. 29, if νοῦς were the mere power of thinking, δῆλον, ὅτι ἄλλο τι ἂν εἴη τὸ τιμιώτερον ἢ ὁ νοῦς, τὸ νοούμενον· καὶ γὰρ τὸ νοεῖν καὶ ἡ νόησις ὑπάρξει καὶ τὸ χείριστον νοοῦντι· ὥστ' εἰ φευκτὸν τοῦτο, . . . οὐκ ἂν εἴη τὸ ἄριστον ἡ νόησις· αὑτὸν ἄρα νοεῖ, εἴπερ ἐστὶ τὸ κράτιστον, καὶ ἔστιν ἡ νόησις νοήσεως νόησις. c. 7 (see n. 4). *De An.* iii. 6, 430, b, 24: εἰ δέ τινι μή ἐστιν ἐναντίον τῶν αἰτίων [?], αὐτὸ ἑαυτὸ γινώσκει καὶ ἐνεργείᾳ ἐστὶ καὶ χωριστόν.

[3] See preceding note and *Metaph.* xii. 9: φαίνεται δ' ἀεὶ ἄλλου ἡ ἐπιστήμη, . . . ἢ ἐπ' ἐνίων ἡ ἐπιστήμη τὸ πρᾶγμα; ἐπὶ μὲν τῶν ποιητικῶν ἄνευ ὕλης ἡ οὐσία καὶ τὸ τί ἦν εἶναι, ἐπὶ δὲ τῶν θεωρητικῶν ὁ λόγος τὸ πρᾶγμα καὶ ἡ νόησις. οὐχ ἑτέρου οὖν ὄντος τοῦ νοουμένου καὶ τοῦ νοῦ, ὅσα μὴ ὕλην ἔχει τὸ αὐτὸ ἔσται, καὶ ἡ νόησις τοῦ νοουμένου μία. *De An.* iii. 4 *fin.* (cf. c. 5 and c. 7 *init.*): ἐπὶ μὲν γὰρ τῶν ἄνευ ὕλης τὸ αὐτό ἐστι τὸ νοοῦν καὶ τὸ νοούμενον.

[4] *Metaph.* xii. 9: 1075, b, 7: ἀδιαίρετον πᾶν τὸ μὴ ἔχον ὕλην, &c., see p. 397, n. 1, *supra*.

[5] This view is set forth in the passage immediately following that quoted p. 394, n. 1: διαγωγὴ δ' ἐστὶν [sc. τῷ πρώτῳ κινοῦντι] οἵα ἡ ἀρίστη μικρὸν χρόνον ἡμῖν. οὕτω γὰρ ἀεὶ ἐκεῖνό ἐστιν· ἡμῖν μὲν γὰρ ἀδύνατον. ἐπεὶ καὶ ἡδονὴ ἡ ἐνέργεια [so BONITZ, rightly following Alexander, instead of ἡ ἡδ. ἐνέργ.] τούτου· καὶ διὰ τοῦτο [*i.e.* because not God's activity alone, but activity in general, is pleasant, for in this passage, as often in this book, lucidity is sacrificed to an excessive brevity of style] ἐγρήγορσις αἴσθησις νόησις ἥδιστον ἐλπίδες δὲ καὶ μνῆμαι διὰ ταῦτα. ἡ δὲ νόησις ἡ

These propositions of Aristotle concerning the Divine Spirit contain the first attempt to find a scientific basis for Theism. Here first the idea of God as self-conscious intelligence was logically deduced from the principles of a philosophical system instead oι being borrowed from religious notions. And on the very threshold we are confronted with the difficulty the solution of which is the final problem of all systems of theistic speculation: how are we to define the idea of God so that while maintaining his essential difference from all finite reality, we may yet preserve his personality, and *vice versa*? Aristotle represents God as self-conscious Spirit; on the other hand, he deprives Him of body and senses, and, not content with this, declares not only action and creation, but the direction of the will itself towards an object, to be incompatible

καθ' αὑτὴν τοῦ καθ' αὑτὸ ἀρίστου καὶ ἡ μάλιστα τοῦ μάλιστα [pure thought has for its object that which is absolutely best, and all the more fitly the purer it is]. αὑτὸν δὲ νοεῖ ὁ νοῦς κατὰ μετάληψιν τοῦ νοητοῦ· νοητὸς γὰρ γίγνεται θιγγάνων καὶ νοῶν, ὥστε ταὐτὸν νοῦς καὶ νοητόν. τὸ γὰρ δεκτικὸν τοῦ νοητοῦ καὶ τῆς οὐσιας νοῦς, ἐνεργεῖ δὲ ἔχων. ὥστ' ἐκεῖνο [ἐνεργεῖν and ἔχειν] μᾶλλον τούτου [*i.e.* more than the mere receptivity] ὃ δοκεῖ ὁ νοῦς θεῖον ἔχειν, καὶ ἡ θεωρία τὸ ἥδιστον καὶ ἄριστον (and therefore actual knowledge, and not the mere capacity of knowing, is the best and most blessed state. On this meaning of θεωρία *vid.* BONITZ, *Ind. Ar.* 328, a, 50 sqq.) From l. 18 (ἡ δὲ νόησις ἡ καθ' αὑτὴν) this passage is quite general, referring neither to the divine nor to the human reason exclusively; l. 24, however, continues: εἰ οὖν οὕτως εὖ ἔχει, ὡς ἡμεῖς ποτὲ, ὁ θεὸς ἀεὶ, θαυμαστόν· εἰ δὲ μᾶλλον ἔτι θαυμασιώτερον. ἔχει δὲ ὡδί. καὶ ζωὴ δέ γε ὑπάρχει. ἡ γὰρ νοῦ ἐνέργεια ζωὴ, ἐκεῖνος δὲ ἡ ἐνέργεια· ἐνέργεια δὲ ἡ καθ' αὑτὴν ἐκείνου ζωὴ ἀρίστη καὶ ἀΐδιος. φαμὲν δὴ, . . ., as at p. 397, n. 3, *supra*. Further cf. *Eth.* x. 8, cited at p. 397, n. 1; *ibid.* vii. 15, 1154, b, 25: εἴ του ἡ φύσις ἁπλῆ εἴη, ἀεὶ ἡ αὐτὴ πρᾶξις ἡδίστη ἔσται· διὸ ὁ θεὸς ἀεὶ μίαν καὶ ἁπλῆν χαίρει ἡδονήν; and *Polit.* vii. 1, 1323, b, 23: τῷ θεῷ . . . ὃς εὐδαίμων μέν ἐστι καὶ μακάριος, δι' οὐθὲν δὲ τῶν ἐξωτερικῶν ἀγαθῶν ἀλλὰ δι' αὑτὸν αὐτὸς καὶ τῷ ποιός τις εἶναι τὴν φύσιν.

with divine perfection,[1] and confines his thought within

[1] That neither ποίησις nor πρᾶξις (on the difference between them cf. p. 182 sq.) can be attributed to God is definitely stated by Aristotle in many passages; *e.g. Eth.* x. 8, 1178, b, 7 sq. The position that perfect bliss consists in thought alone, he there proves by showing that everyone considers the gods blessed and that the question then is: πράξεις δὲ ποίας ἀπονεῖμαι χρεὼν αὐτοῖς; πότερα τὰς δικαίας; . . . ἀλλὰ τὰς ἀνδρείους . . . ἢ τὰς ἐλευθερίους; . . . αἱ δὲ σώφρονες τί ἂν εἶεν; All these being inconceivable (διεξιοῦσι δὲ πάντα φαίνοιτ' ἂν τὰ περὶ τὰς πράξεις μικρὰ καὶ ἀνάξια θεῶν), he concludes: τῷ δὴ ζῶντι, &c. (as at p. 397, n. 1). *De Cœlo* ii. 12, 292, a, 22: ἔοικε γὰρ τῷ μὲν ἄριστα ἔχοντι ὑπάρχειν τὸ εὖ ἄνευ πράξεως, τῷ δ' ἐγγύτατα [the heavenly bodies of the outer sphere] διὰ ὀλίγης καὶ μιᾶς. *Ibid.* b, 4, cited p. 396, n. 3, *supra*; *Gen. et Corr.* i. 6, 323, a, 12: since every ποιεῖν involves a corresponding πάσχειν, we cannot ascribe a ποιεῖν to every *movens*, but only to such as must itself be moved in order that it may in turn move; κινεῖν, therefore, is a more comprehensive conception than ποιεῖν. These details are much too explicit to permit the assertion (BRENTANO, *Psychol. d. Arist.* 247 sq.) that Aristotle desires to deny to Deity only such actions (πράττειν; universal 'action' must be ascribed to God on any view) as result from a felt need, and that therefore, while denying that πράττειν contributes anything to the blessedness of God, he does not deny that it belongs to Him generally. Aristotle does not recognise any such limitation, which, moreover, would be wholly inconsistent with his other views (for since, according to the passage quoted p. 394, n. 1, all God's properties must be absolutely necessary, none can belong to Him which He does not require for his perfection and blessedness, and which therefore He could not dispense with without prejudice to these). On the contrary, he says without any reservation (*Eth.* x. 8; see p. 397, n. 1, *supra*), that neither ποιεῖν nor πράττειν can be attributed to God; that perfection in action (practical virtue) can only find a place in human intercourse and among beings who are subject to human passions (*Eth.* x. 8, 1178, a, 9, b, 5, vii. 1, 1145, a, 25); that every action is a means to an end different from itself, and therefore that it cannot be attributed to God, for whom there is no end not yet attained (*De Cœlo*, as quoted above). Nor is it any objection to this view that Aristotle elsewhere (*Eth.* vii. 15, see p. 398, n. 5 *fin.*; *Polit.* vii. 3, 1325, b, 28) speaks of God's πρᾶξις, since the word here used in the wider sense in which it occurs in *Eth.* vi. 2, 5, 1139, b, 3, 1140, b, 6 (where it is said that πρᾶξις differs from ποίησις in having its end in itself, εὐπραξία being the τέλος) and includes every form of activity, even the pure activity of thought. No other meaning will suit the words, *Eth.* vii. 15, ἀεὶ ἡ αὐτὴ πρᾶξις; and in a similar sense *Pol.*, as above, l. 16 sqq., distinguishes πράξεις πρὸς ἑτέρους, τὰς τῶν ἀποβαινόντων χάριν γιγνομένας ἐκ τοῦ πράττειν—in a word,

the limits of an isolated self-contemplation. But this

πράξεις ἐξωτερικαί, actions which elsewhere are called simply πρᾶξις in the narrower sense of the word—from τὰς αὐτοτελεῖς, καὶ τὰς αὑτῶν ἕνεκα θεωρίας καὶ διανοήσεις, and attributes only the latter to God, in opposing the view that the practical life is superior to the theoretic; σχολῇ γὰρ ἂν ὁ θεὸς ἔχοι καλῶς καὶ πᾶς ὁ κόσμος, οἷς οὐκ εἰσὶν ἐξωτερικαὶ πράξεις παρὰ τὰς οἰκείας τὰς αὑτῶν. Still less is it a pertinent objection that in using popular language Aristotle ascribes ποιεῖν to God, as in *De Cœlo*, i. 4 *fin.* (ὁ θεὸς καὶ ἡ φύσις οὐδὲν μάτην ποιοῦσιν), *Gen. et Corr.* ii. 10, 336, b, 31 (συνεπλήρωσε τὸ ὅλον ὁ θεὸς, ἐντελεχῆ ποιήσας τὴν γένεσιν). Θεὸς here means the divine force which governs nature, whose relation to the first cause of motion is left, as we shall see, wholly undefined; nor can we draw any conclusion from this use as to Aristotle's view of God as the absolute supramundane reason, any more than from the frequent use of θεοὶ as in *Eth.* x. 8, quoted above, and *ibid.* viii. 14, 1162, a, 4, x. 9, 1179, a, 24, we may argue that Aristotle was a polytheist. Ποιεῖν also in these passages seems to be used quite generally and not to be limited any more than ποιητικὸν, *Metaph.* xii. 6, 1071, b, 12 (to which BRENTANO appeals, but which is nowhere directly applied to God by Aristotle) to the narrower sense discussed p. 182; it bears merely the general signification of creation or production, as in the phrase νοῦς ποιητικὸς, and merely indicates causality in general without further specification of its nature.—But if action does not belong to God, neither can will, for as will (προαίρεσις) is ἀρχὴ πράξεως and originates in turn in a desire on the one hand and the conception of an end on the other, it always presupposes an ἠθικὴ ἕξις (*Eth.* vi. 2, 1139, a, 31): and these ideas it is impossible to reconcile with Aristotle's conception of God. Furthermore, βούλησις, *De An.* iii. 10, 433, a, 23, is defined as rational desire; but desire cannot in any sense be ascribed by Aristotle to God; nor can we admit the assertion of BRENTANO, p. 246, that because he ascribes to Him ἡδονὴ, he must also have ascribed to Him something corresponding to desire in us. It is only of sensuous λύπη and ἡδονὴ that Aristotle says (*De An.* ii. 2, 413, b, 23) that it involves ἐπιθυμία; he expressly adds that he is not here speaking of Nous; and *ibid.* iii. 7, 431, a, 10 he declares ὀρεκτικὸν and φευκτικὸν to be identical with αἰσθητικὸν, and remarks iii. 9, 10, 432, b, 27, 433, a, 14, cf. *Eth.* vi. 2, 1139, a, 35, that the νοῦς θεωρητικὸς (therefore also the divine) does not deal with the φευκτὸν and διωκτὸν by which desire is always conditioned. It is evident that those passages in which Aristotle uses the common conceptions of God as generally admitted premisses from which conclusions may be drawn—*e.g.* *Top.* iv. 5, 126, a, 34; *Eth.* x. 9, 1179, a, 24, or, indeed, such quotations as *Eth.* vi. 2, 1139, b, 9, *Rhet.* ii. 23, 1398, a, 15—prove nothing. Such statements as that God 'in making Himself the

solution[1] is wholly unsatisfactory. On the one hand, personal existence implies activity of will no less than of thought. On the other hand, thought *qua* personal is always in transition from possibility to actuality—in other words, in a state of development—and is determined as much by the variety of its objects as by changes of intellectual states. Aristotle by destroying these conditions and confining the function of the Divine Reason to a monotonous self-contemplation, not quickened into life by any change or development, merges the notion of personality in a mere abstraction.

The difficulties which perplex us when we come to consider the operation of God upon the world are not

object of desire for his own sake desires the universe and the whole order of nature' (BRENT. 247), receive no support whatsoever from Aristotle. Such a conception, on the contrary, is wholly irreconcilable with his idea of God, for all desire is an effort after something not yet attained, and in a φύσις τοῦ ἀρίστου τετυχηκυῖα (*Metaph.* xii. 8, 1074, a, 19) any such effort is inconceivable.

[1] On this point also Aristotle has expressed himself with a definiteness that leaves no room for doubt. Neither the view of BRENT. (*Psych. d. Arist.* 246 sq.), that in knowing Himself, God knows the whole creation as well, nor SCHNEIDER's modification of it (*De Causa finali Arist.* 79 sq.; cf. also KYM, *Metaphys. Unters.* 252, 256), to the effect that God knows the intelligible world as the totality of the forms that are contained in his thought, finds any justification in Aristotle's writings. The passage *Metaph.* xii. 10 (see p. 391, n. 2, *supra*) offers no support to either. Aristotle is here inquiring in what way the world contains the good. The only answer which he gives, however, to this question is contained in the words καὶ γὰρ ἐν τῇ τάξει τὸ εὖ καὶ ὁ στρατηγός, καὶ μᾶλλον οὗτος· οὐ γὰρ οὗτος διὰ τὴν τάξιν ἀλλ' ἐκείνη διὰ τοῦτον ἐστιν. If we apply this to the idea of God and the world it certainly follows that the perfection of the universe resides in the first place in God as the first cause of motion, and secondly in the universal order that owes its origin to it. On the other hand, the comparison of the world to an army gives no clue to the method in which the order of the universe proceeds from God (for this was not the question under discussion). As we evidently cannot conclude from it that God sketches plans, issues commands to his subordinates, &c. (though this way of representing God's government of the

less weighty. Aristotle describes God, as we have seen, not only as the *primum mobile*, but also more generally as the highest principle[1] and the ground of the collective cosmos.[2] While we are not justified in attributing to him a belief in a Providence which extends its care to individuals,[3] we may yet see that he acknowledges the world to be the work of Reason,[4] that

universe is common enough), neither does it follow that God produces the order of the world by a process of thought which has for its object the world itself or its individual parts. That point can only be decided by a reference to declarations elsewhere made by Aristotle. Still further at variance with the spirit of the above comparison is the statement of KYM, p. 246 sq., that the good or God does not merely exist outside the world as an individual being, but is immanent in it as order and design. 'God' and 'the good' are not, however, to Aristotle convertible terms (cf. *e.g. Eth.* i. 4, 1096, a, 23, BONITZ, *Ind. Ar.* 3, b, 35 sqq.), and the general is quite different from the order of the army. Cf. further p. 413 sq.

[1] *Metaph.* xi. 2, 1060, a 27, cannot, indeed, be quoted in support of this statement; for the words εἴπερ ἔστι τις οὐσία καὶ ἀρχὴ τοιαύτη τὴν φύσιν οἵαν νῦν ζητοῦμεν, καὶ αὕτη μία πάντων καὶ ἡ αὐτὴ τῶν ἀϊδίων τε καὶ φθαρτῶν, not only, as may be seen from the context and from the parallel passage iii. 4, 1000, a, 5 sqq., leave it in doubt whether there be such an ἀρχὴ or not, but they do not speak of God as an individual being. The words in iii. 4, are: πότερον αἱ αὐταὶ τῶν φθαρτῶν καὶ τῶν ἀφθάρτων ἀρχαί εἰσιν. On the other hand we read in *Metaph.* xi. 7, 1064, a, 34 sqq.: if there be an οὐσία χωριστὴ καὶ ἀκίνητος, ἐνταῦθ' ἂν εἴη που καὶ τὸ θεῖον, καὶ αὕτη ἂν εἴη πρώτη καὶ κυριωτάτη ἀρχή.

[2] *Metaph.* xii. 7, 10; see p. 394, n. 1, and p. 391, n. 2, *supra*, *De Cœlo*, i. 9; see p. 395, n. 6.

[3] On this subject cf. p. 422, n. 1; see Ch. XVI. *infra*. How little the passages referred to are to be taken literally is obvious from the fact that the gods (θεοί) are always spoken of in them in the plural. But if we have thus first to translate them into language possible to the philosopher in order to discover his true meaning, it is a question whether we have not to make as great a deduction from their literal content as in the parallel cases which will be discussed *infra*, at the end of the section in Ch. IX. on the Universe.

[4] Anaxagoras is praised (*Metaph.* i. 3, 984, b, 15, cf. *Phys.* viii. 5, 256, b, 24) for having made νοῦς αἴτιος τοῦ κόσμου καὶ τῆς τάξεως πάσης, and it is remarked *Phys.* ii. 6, 198. a, 9, that αὐτόματον and τύχη always pre suppose a νοῦς and a φύσις.

he recognises,[1] in the adaptations of nature, traces of the operation of God, and that he finds in human Reason an indwelling element of Divinity.[2] But if we attempt to bring these convictions into harmony with his theology as above discussed, we are met by many questions to which it is not easy to find an answer.

In the first place, it is obvious that if God exercises neither creative nor practical activity in relation to anything else, He cannot be the *primum mobile*. Here, however, we are met by the notion to which we have already alluded: that Form, without moving itself, exercises a power of attraction over Matter, causing it to move in its direction. 'God moves the world in this way: the object of desire and the object of thought cause motion without moving themselves. But these two motive forces are ultimately the same (the absolute object of thought is the absolutely desirable or pure good); for the object of desire is apparent beauty, while the original object of will is real beauty; but desire is conditioned by our notion (of the value of the object) and not *vice versa*. Thought, therefore, is the starting-point or principle. Thought, however, is set in motion by the object of thought; but only one of the two series is absolutely intelligible,[3] and in

[1] Cf. p. 421, and p. 460 sq.

[2] *Eth.* ix. 7, 9, 1177, a, 13, b, 30, 1179, a, 26; *Gen. An.* ii. 3, 736, b, 27, 737, a, 10; *De An.* i. 4, 408, b, 29; *Part. An.* ii. 10, 656, a, 7, iv. 10, 686, a, 28, 373.

[3] Νοητὴ δὲ ἡ ἑτέρα συστοιχία καθ' αὑτήν. By this ἑτέρα συστοιχία we are to understand, as the more recent commentators rightly point out, and as is obvious from l. 35, the series of being and good. The expression refers to the Pythagorean and Platonic doctrine of the universally prevalent antithesis of being and not-being, perfection and imperfection, &c., which Aristotle had discussed at length in the Ἐκλογὴ τῶν Ἐναντίων (see p. 61, n. 1,

this Being stands first, defined as simple and actual.'[1] 'The final cause operates like a loved object, and that which is moved by it communicates motion to the rest.'[2] God, therefore, is the *primum mobile* only in so far as He is the absolute end of the world,[3] the Governor, as it were, whose will all obey, but who never sets his own hand to the work.[4] And He fulfils this function by being absolute Form. As Form in general moves Matter by inviting it to pass from potentiality into actuality, the operation of God upon the world must be of the same sort.[5] Without doubt

*supra*) and often alludes to elsewhere; cf. *Metaph.* iv. 2, 1004, a, 1, ix. 2, 1046, b, 2, xiv. 6, 1093, b, 12, i. 5, 986, a, 23; *Phys.* iii. 2, 201, b, 25, i. 9, 192, a, 14; *Gen. et Corr.* i. 3, 319, a, 14.

[1] *Metaph.* xii. 7, 1072, a, 26; see BONITZ and SCHWEGLER.

[2] *Ibid.* 1072, b, 3: κινεῖ δὲ ὡς ἐρώμενον, κινούμενον (better Cod. E T: κινουμένῳ) δὲ τἆλλα κινεῖ.

[3] As also do the movers of the celestial spheres (to be discussed *infra*, Ch. IX. in the section on the Spheres); these cause motion, according to *Metaph.* xii. 8, 1074, a, 23, ὡς τέλος οὖσαι φορᾶς.

[4] Cf. *Metaph.* xii. 10 *init.* and *fin.*

[5] The subject, however, is here only treated generally: the question is not whether God moves the world but how He moves it, and it is therefore irrelevant when BRENTANO, *ibid.* 235 sqq., contests the assertion that God 'is not the first operative principle, but only the final cause, of being'; that according to Aristotle 'no operation at all belongs' to Him. This assertion would certainly be strange, for if God is the first mover He must be the first operator, since the κινητικὸν αἴτιον and the ποιητικὸν are the same (*De An.* iii. 5 *init.*; *Gen. An.* i. 21, 729, b, 13; *Metaph.* xii. 6, 1071, b, 12; *Gen. et Corr.* i. 7, 324, b, 13: ἔστι δὲ τὸ ποιητικὸν αἴτιον ὡς ὅθεν ἡ ἀρχὴ τῆς κινήσεως) and only a certain kind of ποίησις is denied of God (see p. 400, n. 1). But it is quite another thing to say that according to Aristotle God operates upon the world not directly but indirectly, not by Himself exercising activity upon it, but as perfect being by eliciting its activity by his mere existence; He is efficient cause only in virtue of his being final cause. Nor is it sufficient to discredit this statement to adduce passages in which God is described in general as the moving or efficient principle of the world. No one doubts that this is so. To prove our view wrong, it would be necessary to produce passages in which direct action upon the world is attributed to Him; it would be further neces-

this doctrine harmonises admirably with the whole system. It gives us, in fact, the proper coping-stone of the Metaphysics, by clearly exhibiting the ultimate unity of formal, efficient, and final causes, and their relation to the material cause. We find in it, moreover, the ultimate principle of union between the Metaphysics and the Physics—the point at which the investigations into the nature of the Unmoved and the Moved meet and find a common issue. It enables Aristotle to trace to absolutely immaterial and unmoved Being the ultimate source of all movement and change, and to make God the central, controlling principle of the universe without involving Him in its machinery on the one hand or disturbing the uniformity of natural law by personal interference with it on the other. It further furnishes him with the means of reconciling the eternity of the world with its dependence upon a divine supernatural Being. If the existence or the order or the motion of the universe be referred to definite acts of Deity, we are forced to assume that the world had a beginning, since every single act and that which is produced by it has a beginning in time.[1] On the other hand, a system which is gravitating towards a fixed and definite point, and which owes its motion to the attraction which is thus exercised upon it (and Aristotle's Cosmos is such a system), can be conceived of indifferently as with or without beginning. But the

sary to show how any such statement can be reconciled with those passages which explicitly deny any such action of Him; and finally to harmonise it with the Aristotelian conception of the nature of God as an absolutely unchangeable Being who is the only object of His own thought.

[1] Cf. p. 412, n. 1.

more important the above doctrine is for Aristotle, the more obviously does it reveal the weak side of his theory. The notion of the *motum* naturally desiring the *mobile*, the Corporeal seeking the Divine, is so obscure [1] as to be almost unintelligible to us.[2] Further, if, as

[1] As THEOPHRASTUS easily discerned, *Fr.* 12 (*Metaph.*), 8: εἰ δὴ ἔφεσις, ἄλλως τε καὶ τοῦ ἀρίστου, μετὰ ψυχῆς, . . . ἔμψυχ' ἂν εἴη τὰ κινούμενα. Similarly PROCLUS, *in Tim.* 82, A (cf. SCHRADER, *Arist. de Volunt. Doctr.* Brandenb. 1847, p. 15, A, 42) asks: εἰ γὰρ ἐρᾷ ὁ κόσμος, ὥς φησι καὶ 'Αριστοτέλης, τοῦ νοῦ καὶ κινεῖται πρὸς αὐτὸν, πόθεν ἔχει ταύτην τὴν ἔφεσιν;

[2] We are not, of course, therefore justified in denying that Aristotle held this notion in the face of his own plain and repeated statements and the interpretations of them in this sense by the most faithful of his disciples; all the less as it is hard indeed (as the discussion in THEOPHRASTUS, *Fr.* 12, 5, clearly proves) to say in what other way motion can, on Aristotle's principles, be conceived of as proceeding from the absolutely unmoved. BRENTANO (as above, 239 sq.) thinks, indeed, that there is nothing so totally in contradiction to the Aristotelian doctrine as the view that 'matter is the efficient principle because it moves of itself to meet God, who is its end.' As little, he says, can 'the end produce anything of itself without an efficient principle.' But nobody has asserted either the one or the other. When it is said that God causes motion by causing the desire for his own perfection, it is not meant that the matter in which this desire is produced causes the motion; as little can it mean that the end produces it by itself alone, apart from any efficient principle. The fact is that the efficient cause is not here regarded as different from the final. Though *we* should perhaps in such a case conceive of two independent causes at work, the attractive force and the thing that permits itself to be attracted, Aristotle represents the relationship otherwise. He ascribes to the mover a δύναμις ποιητικὴ, to the motion merely a δύναμις παθητικὴ (*Metaph.* v. 15, 1021, a, 15, ix. 1, 1046, a, 16 sqq.). It is impossible, therefore, for him to attribute to that which owes its motion to something else, any independent efficiency of its own. On the contrary, the efficient and the final cause, as has been shown at p. 356 sq., he conceives of as in essence one. Their apparent severance under certain circumstances is only a phenomenon of the sensible world, where form realises itself in matter, and therefore (cf. pp. 368 sq.) in a plurality of individuals. In the intelligible world, however, efficient and final cause are always one and the same, and accordingly it is impossible to speak of an end producing anything apart from a principle

Aristotle supposes, the *motum* must be in contact[1] with the *mobile*, it follows that the Universe must be in contact with the *primum mobile*, as, indeed, Aristotle explicitly states.[2] It is true that he endeavours to exclude the notion of contiguity in space from this idea; for he often employs the expression 'contact' when the context clearly proves that he does not allude to juxtaposition in space, but only to an immediate connection between two things.[3] Moreover, he asserts[4] that the *motum* is in contact with the *primum mobile*, but not *vice versa*. But even though we overlook the contradiction that is here involved, we find the notion

of efficiency.—Similar to the action of God Himself is that of the spheral spirits, which produce motion in their respective spheres as being themselves the end of the motion; cf. p. 405, n. 3.—It is still more strange that BRENTANO goes beyond the view which he combats, in saying, p. 240, that according to *Metaph.* xii. 7, 1072, a, 26: 'God moves as known;' for since matter, as he himself adds, cannot know God, it would follow from this that God does not move matter at all. The assertion, however, rests upon a misunderstanding. Aristotle says (cf. p. 404): τὸ ὀρεκτὸν καὶ τὸ νοητὸν κινεῖ οὐ κινούμενον . . . νοῦς δὲ ὑπὸ τοῦ νοητοῦ κινεῖται . . . . . κινεῖ δὲ ὡς ἐρώμενον. As νοητὸν God moves only Nous (to which, however, motion can be ascribed only in an improper sense; cf. Ch. XI. at the commencement and at the end, *infra*); the world, on the other hand, He moves as ἐρώμενον by means of the ὄρεξις which He causes. We, indeed, should not think of ascribing any such quality to matter, and we should hesitate scarcely less to attribute to plants and animals a 'longing after the divine' as Aristotle does in *De An.* ii. 4, 415, a, 26 sqq. (see Ch. X. pt. 2, *infra*). Even the doctrine of a plant and animal soul would scarcely justify such a view in our eyes, as from such a soul the thought of God is necessarily excluded. But just as Aristotle here attributes to non-rational existence an unconscious yearning after τὸ θεῖον, so the conception of a world animate throughout, so natural to the Greek and yet resting ultimately on an untenable anthropological analogy, enables him to view the astral spheres, which he holds to be of a far higher nature than any earthly existence (see Ch. IX. on the Universe), in the same light.

[1] Cf. *supra*, p. 386.

[2] *Gen. et Corr.* i. 6, 323, a, 20.

[3] Cf. *supra*, p. 203, n. 3.

[4] *Gen. et Corr. ibid.*; see p. 387, n. 3, *supra*.

of existence in space forced upon us still more remarkably by the further assertion that God in setting the world in motion starts from its circumference. For since generally the primordial motion is taken to be motion in space,[1] and of the original motions in space none is absolutely continuous and uniform except circular motion,[2] the operation of the first mover upon the world must consist in the production of circular motion.[3] According to Aristotle, this might be effected either from the centre or the circumference of the world, for both of these places are ἀρχαὶ, and command the whole movement. He prefers the latter, however, because it is clear that the circumference moves faster than the centre, and that which is nearest to the cause of motion ought to move at the quickest rate.[4] In defending this position he might hope to evade the objection that he places God in a particular locality by his peculiar theory of space, which excluded from the notion everything that lay beyond the limits of the world.[5] It is obvious, however, that we cannot accept this defence. Again as the Deity, relatively to Himself, is confined to the unvarying exercise of uniform self-contemplation, so, in his relation to the world, He has no other function but that of monotonously causing circular motion. To explain the rich variety of finite existence with the

[1] *Phys.* viii. 7, 9; see p. 421 sq.

[2] *Ibid.* c. 8 sq.; *De Cœlo*, i. 2; *Metaph.* xii. 6, 1071, b, 10.

[3] *Phys.* viii. 6 *fin.*, c. 8 *fin.*; *Metaph.* xii. 6 *fin.*; c. 8, 1073, a, 23 sqq.

[4] *Phys.* viii. 10, 267, b, 6; *De Cœlo*, i. 9, 279, a, 16 sqq. (see p. 395, n. 6, *supra*). Hence the assertion (Sext. *Math.* x. 23; *Hypotyp.* iii. 218) that God is to Aristotle τὸ πέρας τοῦ οὐρανοῦ.

[5] Cf. *De Cœlo*, i. 9 (cited as above, at p. 395, n. 6) and p. 432, n. 5.

infinite diversities and subdivisions of its motion, by means of this simple and uniform activity, would be impossible. Aristotle himself admits as much with reference to the heavenly bodies; and accordingly he adds to the first mover a number of subordinate but equally eternal substances, whose business it is to cause the special motions of the planets.[1] The same provision must, however, be made to account for special motion of all kinds and for every separate property of things. As the First Cause of motion cannot have produced them, seeing that it exercises one general function in the world and nothing more, we are driven to assume some special cause for them.[2] Only it will not do to point merely to something which is equally general in its operation: for example, to the inclination of the orbit of the sun and planets, from which Aristotle deduces the phenomena of growth and destruction.[3] The special character of everything must be ascribed to its own particular nature and Form.[4] Here a new question rises: what position do these particular Forms, which operate as creative forces in finite things and constitute their peculiar essence, occupy with respect to the highest form, the primordial motive force, or God? Or what are we to say of those beings which, belonging as they do to the supernatural world, are unaffected by

[1] *Metaph.* xii. 8, 1073, a, 26. For fuller explanation see Ch. IX. *infra*.

[2] *Metaph.* xii. 6, 1072, a, 9: to secure the uniformity of the motion of the world (περιόδῳ l. 10 is prob. corrupt), δεῖ τι ἀεὶ μένειν ὡσαύτως ἐνεργοῦν. εἰ δὲ μέλλει γένεσις καὶ φθορὰ εἶναι, ἄλλο δεῖ εἶναι ἐνεργοῦν ἄλλως καὶ ἄλλως.

[3] *Gen. et Corr.* ii. 10, 336, a, 23; see the section of Ch. IX. *infra*, which deals with the earthly world.

[4] Cf., besides p. 350 sq., the passages quoted *infra*, p. 432, n. 5.

the changes of birth and destruction—the heavenly spheres with the spirits that move and animate them, and the immortal part of the human soul?[1] What explanation does Aristotle offer us of the existence and peculiar nature of these beings? We cannot suppose them to be God's creatures;[2] for not only does such a notion obtain no support from his system and writings,[3]

[1] That these three classes of being are uncreated and indestructible not only follows from the eternity of the world and its motion, but is also expressly stated by Aristotle; cf. p. 474 sq. and Ch. IX. *infra*.

[2] As BRENTANO holds them to be, *Psych. d. Arist.* 198, 234 sqq. BULLINGER goes even further, *Des Arist. Erhabenheit über allen Dualismus* etc. (1878), p. 2 sq. According to his view, Aristotle supposed not only the whole world, but even the material of which it is made, to originate in a divine act of creation. Thus 'the material out of which God creates the world' would, according to Aristotle, be nothing else 'than the power and might eternally actual in God, whereby the world is actualised,' &c. (p. 15). It will be sufficiently evident from the account already given in the text that speculations are here attributed to Aristotle which are as foreign to the range of his thought as they are in conflict with his definite declarations.

[3] That God is called πρώτη ἀρχὴ (see p. 403, *supra*), proves nothing; for this may mean, not only that He has produced everything, but also that He is the condition of the eternal order and activity of the world: ἀρχὴ, indeed (*Metaph.* v. 1, 1013, a, 16, 20 sq.), is used in as many senses as αἴτιον, and includes especially the conception of final cause. Since it is God who, as the most perfect being in the universe, gives unity of aim to the whole, and who causes the all-governing motion of the first sphere, He is also the πράτη καὶ κυριωτάτη ἀρχὴ, on Him the whole order of the universe may be said to depend (p. 394, n. 1, and 395, n. 6), and to Him we are justified in applying "εἷς κοίρανος ἔστω" (p. 391, n. 2). The commander, however, is not therefore the creator of his subordinates. And as little does it follow from *Metaph.* ix. 8, 1050, b, 3 (see p. 385, n. 1, *supra*) that the creative activity of God precedes all being in time; for the ἀεὶ κινοῦν πρώτως does not (as Ps. ALEX. *in loc.* certainly thought) refer to God as the first cause of motion in the universe. On the contrary (as is obvious from the explanation upon p. 1049, b, 17 sqq. which the ὥσπερ εἴπομεν recalls), the reference is here to the fact that every individual thing presupposes as the condition of its production another similar already existing thing, and this likewise another, ἕως τοῦ ἀεὶ κινοῦντος πρώτως: *i.e.* until we come to the first member of the

but it would involve us in the contradiction of supposing the uncreated to be at the same time created, that which has been declared to be eternal to have had a beginning in time.[1] The same question arises with

series in question which has given the first impulse to the whole series, the *primum movens* in each case (not the πρῶτον κινοῦν); and this is the reason why the ἀεὶ κιν. πρ. is repeated from p. 1049, b, 26, where (as *Phys.* viii. 10, 267, a, 1, 3) this is undoubtedly its meaning. Aristotle was precluded from holding any theory of creation by his view of the eternity of the world. Such a theory, moreover, is incompatible, not only with the assertion that to God belongs neither πράττειν nor ποιεῖν (see p. 400, n. 1), but also with the principle *ex nihilo nihil fit* (*Phys.* i. 4, 187, a, 34, c. 7, 190, a, 14; *Gen. An.* ii. 1, 733, b, 24; *Metaph.* iii. 4, 999, b, 6, vii. 7, 1032, a, 13, 20, b, 30, c. 8 *init.*, ix. 8, 1049, b, 28, xi. 6, 1062, b, 24), from which we have not the smallest right to make an exception in favour of the Deity, as BRENTANO, 249, does.

[1] BRENTANO, p. 240, indeed, believes that the eternity in time of immaterial substances as little dispenses with the necessity of an efficient principle for them as the eternity of motion dispenses with the necessity of a mover; in other words, he endeavours to reconcile the eternity of the world with the theory of its creation by means of the conception of an eternal creative activity in God. But upon the principles of the Aristotelian as of every subsequent theism this is impossible. One who conceives of God as the substance of the world, and of finite things as mere manifestations of the divine force immanent in them, may, and even must, in consequence, declare that the one is as eternal as the other. One, on the other hand, who treats God as a personal being outside the world, distinguishing other beings from Him as so many independent substances, would involve himself in a palpable contradiction were he to hold that the latter are eternally created by the former. Creation as an act proceeding from a personal will must necessarily be in time, and an individual being in order to produce other beings must necessarily exist before them. For only *causæ immanentes* have contemporaneous effects; *causæ transeuntes* always precede their effects: the father precedes the son, the artist the work of art, the creator the creature. Such a contradiction we should be justified in attributing to Aristotle, only if we could show that he held alike to the eternity of the world and to a creative activity of God. The opposite, however, is the case. Aristotle holds, indeed, quite definitely the doctrine of the eternity of the world, but of a creative activity in God we not only find no word in his writings, but he expressly de-

respect to the Forms of sensible things, and to the order of nature which results from their union with Matter: they also are uncreated.[1] It is equally impossible upon Aristotle's showing to explain the adaptations of nature as the result of any personal interference on the part of God.[2] If, finally, the ancient Greek view of the universe as interpenetrated by divine forces is in open disagreement with Aristotle's dualistic theism,[3] this does not, where the question is one of his scientific views, justify us in setting aside or explaining away his own definite and well-considered statements, on the ground that he has neglected to bring them into harmony with views that were pressed upon him from another side.

Brandis adopts another method of solving the above difficulties. He believes that Aristotle regarded the Forms as the eternal thoughts of God, whose self-development produces alteration in individual things, and the harmony of whose transmutations is guaranteed by the fundamental unity which underlies them.[4] But,

clares that no ποιεῖν belongs to Him at all. Cf. also *infra*, Ch. XI. near the end.

[1] As is shown in reference to the forms p. 341, n. 2; in reference to the universe as a whole, p. 387.

[2] Such interference is expressly denied of God (see p. 368, n. 1), nor on the theory that the world is eternal can we understand when it could have taken place; cf. p. 412.

[3] Cf. *infra*, p. 420 sq.

[4] *Gr.-röm. Phil.* ii. b, 575, where he says that in order to fully understand Aristotle's metaphysics, we must supply certain important conceptions, and goes on: 'Indeed, that all existences must be traced back to, referred ultimately to, living thoughts of God, and that these must be treated as the simple substrata upon which concrete existences and their mutations ultimately rest, hardly requires to be expressly stated, and is indicated by the question (*Metaph.* xii. 9, see p. 298, n. 2, *supra*): If nothing is attained by the thought of the divine spirit, wherein consists its worth? We may, moreover, as-

in the first place, this statement can apply only to the Forms as such, and leaves the existence of the eternal substances (the spheral spirits, &c.) wholly unexplained. In the second place, it is untenable even with respect to the Forms. It finds no support in Aristotle's own utterances,[1] and in more than one point it contradicts what he indisputably taught. The object of Divine Thought, according to Aristotle's definite statement, cannot be other than God Himself: not only are finite existences, as these particular things, excluded, but even the specific concepts or forms, which constitute their internal essence, must remain remote from Him, since they are always something different from Himself, and stand far below that which alone can be matter of his thought—viz. divine and perfect

sume that Aristotle—anticipating Leibnitz's doctrine of monads—more or less consciously intended to refer the changes in the qualities or essence of individual existences to the self-development of the divine thought on which they rest, and the obstructions and disturbances in this self-development to its connection with matter or potentiality; and the harmonious variations in the developments of different individual existences, by an anticipation of the conception of a *harmonia præstabilita*, to the unity and perfection of the ultimate reality, the unconditioned spirit of God, which is their common substratum.' Cf. further his p. 578, where the central point of the Aristotelian theology is sought for in the doctrine 'that all determination in the world is referable to dynamic activities, and these again to the eternal thought of God:' and p. 577 n.: 'That dynamic activities which have gone out from God, and therefore also finite being which is animated by these, should seek to return to Him, is quite comprehensible.' So also *ibid.* iii. a, 113 sq.

[1] Even *Metaph.* xii. 9 contains nothing to support BRANDIS's view (cf. also KYM, *Metaph. Unters.* 258). Aristotle there asks how we are to conceive of the thought of the divine spirit: if nothing is thought of by him (not: if 'nothing is attained by his thought') his power of thought must be as worthless as that exercised in sleep; if something other than Himself is thought of, then is the worth of his thought to be measured by the worthiness of its object? But this does not mean that the Divine thoughts constitute the essence of things.

being.[1] Conversely, the Forms of things cannot be thoughts of the Deity, since, according to Aristotle, the Form is the substance of the thing, and Substance can neither be predicated of nor belong to anything.[2] Thoughts cannot be substances, since they exist in the soul as their substratum.[3] Again, we find no analogy in Aristotle for the notion of a self-development of the divine thoughts: indeed, it is directly contradicted by the proposition[4] that there is no change in the thought of God, no transition from one thing to another. Finally, while Brandis maintains that all things strive towards Deity, because the active forces which emanate from Him struggle to return to Him again, Aristotle himself rather ascribes this striving, like all motion, to Matter, which desires to complement and complete itself by means of the forces.[5] Nor is it the least important objection to this view that it clashes with the whole character of Aristotle's system. For supposing the thoughts of Deity to be the supporters of concrete existences and of their mutations, the relation of finite reality to God would be one of immanence: the Deity would by virtue of his thoughts be inherent in things, and the latter would have in God the permanent ground of their shifting properties. Instead of Aristotle's dualistic theism, we should arrive at a system of dynamic pantheism.[6] But not only is it impossible to

[1] See p. 398, n. 1, and p. 397, n. 2, *supra*.

[2] See p. 330 sq., and p. 373 sq. *supra*.

[3] Ἐπιστήμη is the very example which Aristotle mentions of that which is at once predicate and inherent attribute of a substratum; see p. 214, n. 4 *fin. supra*.

[4] P. 397, n. 2, *supra*.

[5] Cf. p. 404 sq., p. 344, n. 1, and p. 379, n. 1, and on the doctrine that motion resides in the motum and therefore in the material, 386, n. 1.

[6] This is made still more

discover such a system in the works of the Philosopher, but even his school were unacquainted with anything of the sort, until the influence of Stoic opinions introduced that fusion of things diverse and fundamentally distinct which meets us in the spurious book upon the World and still more in Neoplatonism. Aristotle leaves it quite uncertain how we are to define the relation of the particular and individual Forms to the Deity. From his utterances upon the subject we can only say that he placed them side by side, without explaining satisfactorily the existence and the special motions of finite things by the operation of the Deity, or even attempting such an explanation. They are given factors, just as Matter is a given factor which he does not attempt to deduce from Form or Deity. It is true that the unity of his system, the *οὐκ ἀγαθὸν πολυκοιρανίη*, is thus rendered more than doubtful.[1]

This brings us to the conclusion of the Metaphysics. God being defined as the First Cause of Motion, philosophy passes from the Unmoved to the Moved—or, in other words, to Nature.

obvious by KYM; cf. *ibid.* p. 242 246 sq., 256, 258 sq., and p. 402, n. 1, *fin. supra.* According to Kym, God is said to be, not only the creative conception, but also the material cause of the world, the indwelling purpose and the productive force that is immanent in it. This, however, is a mere assertion, and is not proved to be Aristotle's own opinion by any detailed investigation into his declarations on the subject.

[1] Cf. THEOPHR. *Fr.* 12 (*Metaph.*), 7: *τὸ δὲ μετὰ ταῦτ' ἤδη λόγου δεῖται πλείονος περὶ τῆς ἐφέσεως, ποία καὶ τίνων, ἐπειδὴ πλείω τὰ κυκλικὰ* [the heavenly spheres] *καὶ αἱ φοραὶ τρόπον τινὰ ὑπεναντίαι καὶ τὸ ἀνήνυτον* [? we should have expected *ἀγαθὸν* or *ἄριστον*] *καὶ οὗ χάριν ἀφανές. εἴτε γὰρ ἓν τὸ κινοῦν, ἄτοπον τὸ μὴ πάντα τὴν αὐτὴν* [sc. *φορὰν κινεῖσθαι*]· *εἴτε καθ' ἕκαστον ἕτερον, αἵ τ' ἀρχαὶ πλείους, ὥστε* [?] *τὸ σύμφωνον αὐτῶν εἰς ὄρεξιν ἰόντων τὴν ἀρίστην οὐδαμῶς φανερόν.*

# CHAPTER VIII

## PHYSICS

### A.—*The Idea of Nature and the most General Conditions of Natural Existence*

FIRST Philosophy, according to the view of Aristotle, has to deal, as we have seen, with unmoved and incorporeal reality: though, in treating of this its proper subject, we were in fact obliged to include some notice of the opposite principle. Natural Philosophy is occupied with the aggregate of corporeal existence which is subject to Motion.[1] All natural substances are bodies, or united to bodies; and under the name of natural existence we include bodies and masses—everything, in fact, which possesses them or is related to them. Hence the whole domain of corporeal existence belongs to Natural Science.[2] But it regards form only in its connection with matter,[3] and the soul in its con-

[1] Cf. p. 183, n. 3.

[2] *De Cœlo*, i. 1 *init.*: ἡ περὶ φύσεως ἐπιστήμη σχεδὸν ἡ πλείστη φαίνεται περί τε σώματα καὶ μεγέθη καὶ τὰ τούτων εἶναι πάθη καὶ τὰς κινήσεις, ἔτι δὲ περὶ τὰς ἀρχάς, ὅσαι τῆς τοιαύτης οὐσίας εἰσίν· τῶν γὰρ φύσει συνεστώτων τὰ μέν ἐστι σώματα καὶ μεγέθη [as the human body], τὰ δ' ἔχει σῶμα καὶ μέγεθος [as man], τὰ δ' ἀρχαὶ τῶν ἐχόντων εἰσίν [as the soul]; iii. 1, 298, b, 27: ἐπεὶ δὲ τῶν φύσει λεγομένων τὰ μέν ἐστιν οὐσίαι τὰ δ' ἔργα καὶ πάθη τούτων [by οὐσίαι, however, he here means both simple and composite bodies] . . . φανερὸν ὅτι τὴν πλείστην συμβαίνει τῆς περὶ φύσεως ἱστορίας περὶ σωμάτων εἶναι· πᾶσαι γὰρ αἱ φυσικαὶ οὐσίαι ἢ σώματα ἢ μετὰ σωμάτων γίγνονται καὶ μεγεθῶν.

[3] *Metaph.* vi. 1, 1025, b, 26 sq. (xi. 7) and elsewhere; see *infra.*

nection with the body.[1] It must, however, be remembered that material existence pertains to Nature and to Natural Philosophy only in so far as it is subject to motion and repose. Mathematical bodies are not natural bodies; indeed, Mathematics may be distinguished from Physics by the fact that the former deals with immovable, the latter with movable, substances.[2] Furthermore, movable existence can only be regarded as 'natural' when it contains within itself the principle of motion; and this is the point of difference between natural things and the productions of art.[3] The distinction, on the other hand, which is drawn between rational and irrational forces, on the ground that the former may act in either of two opposite directions, the latter only in one, and that the former, therefore, are free, the latter necessary—is only a subdivision within the realm of Nature.[4] Yet since in all substance Form and Matter are distinguishable, we are met by this question: Does the essential reality of nature consist in the Form

[1] *Metaph.* vi. 1, 1026, a, 5: περὶ ψυχῆς ἐνίας θεωρῆσαι τοῦ φυσικοῦ, ὅση μὴ ἄνευ τῆς ὕλης ἐστίν. *De An.* i. 1, 403, b, 7. *Part. An.* i. 1, 641, a, 21, 32.

[2] *Phys.* ii. 2, 193, b, 31: the mathematician as well as the physicist is occupied with the form of bodies, ἀλλ' οὐχ ᾗ φυσικοῦ σώματος πέρας ἕκαστον· οὐδὲ τὰ συμβεβηκότα θεωρεῖ ᾗ τοιούτοις [sc. φυσικοῖς] οὖσι συμβέβηκεν. διὸ καὶ χωρίζει· χωριστὰ γὰρ τῇ νοήσει κινήσεώς ἐστι . . . . τὸ μὲν γὰρ περιττὸν ἔσται καὶ τὸ ἄρτιον, etc. ἄνευ κινήσεως, σὰρξ δὲ καὶ ὀστοῦν καὶ ἄνθρωπος οὐκέτι. Cf. what follows and 183, n. 3, *supra*.

[3] *Phys.* ii. 1, 192, b, 13: τὰ μὲν γὰρ φύσει ὄντα πάντα φαίνεται ἔχοντα ἐν ἑαυτοῖς ἀρχὴν κινήσεως καὶ στάσεως, τὰ μὲν κατὰ τόπον, τὰ δὲ κατ' αὔξησιν καὶ φθίσιν, τὰ δὲ κατ' ἀλλοίωσιν· κλίνη δὲ καὶ ἱμάτιον, etc. . . . οὐδεμίαν ὁρμὴν ἔχει μεταβολῆς ἔμφυτον, as he proceeds in the rest of the chapter further to explain. *Metaph.* xii. 3, 1070, a, 7: ἡ μὲν οὖν τέχνη ἀρχὴ ἐν ἄλλῳ [similarly ix. 2, 1046, b, 4] ἡ δὲ φύσις ἀρχὴ ἐν αὐτῷ.

[4] *Metaph.* ix. 2 *init.* c. 5, c. 8, 1050, a, 30 sqq. *De Interpr.* c. 13, 22, b, 39.

or in the Matter? In support of the second alternative it might be asserted that everything requires some material in order to be what it is.[1] Yet Aristotle is forced to maintain the first alternative. The essence of things invariably resides in the Form; it is only by its Form and purpose that a natural object becomes what it is.[2] The true causes are the final causes; the material causes are only the indispensable conditions of natural existence.[3] If, therefore, we wish to determine the general definition of Nature, we must not consider what in it is material, so much as the moving and informing force.[4] Nature is the cause of motion and rest in everything which possesses these conditions of being originally and not merely in some derivative fashion. A natural thing is one that has such a motive force within itself.[5]

But Aristotle does not help us greatly in defining

[1] *Phys.* ii. 1, 193, a, 9–30. *Metaph.* v. 4, 1014, b, 26.

[2] *Phys.* ii. 1, 193, a, 28 sqq. c. 2, 194, a, 12. *Metaph.* as above, l. 35 sqq. *Part. An.* i. 1, 640, b, 28, 641, a, 29, b, 23 sqq.

[3] For a fuller discussion of this point see *infra* and p. 357–8.

[4] *Part. An.* i. 640, b, 28: ἡ γὰρ κατὰ τὴν μορφὴν φύσις κυριωτέρα τῆς ὑλικῆς φύσεως. 641, a, 30: the scientific investigator has to deal with the soul still more than with the body, ὅσῳ μᾶλλον ἡ ὕλη δι' ἐκείνην φύσις ἐστὶν ἢ ἀνάπαλιν.

[5] *Phys.* ii. 1, 192, b, 20: ὡς οὔσης τῆς φύσεως ἀρχῆς τινὸς καὶ αἰτίας τοῦ κινεῖσθαι καὶ ἠρεμεῖν ἐν ᾧ ὑπάρχει πρώτως καθ' αὑτὸ καὶ μὴ κατὰ συμβεβηκός. l. 32: φύσις μὲν οὖν ἐστι τὸ ῥηθέν· φύσιν δὲ ἔχει ὅσα τοιαύτην ἔχει ἀρχήν. *Metaph.* v. 4 *fin.*: ἡ πρώτη φύσις καὶ κυρίως λεγομένη ἐστὶν ἡ οὐσία ἡ τῶν ἐχόντων ἀρχὴν κινήσεως ἐν αὐτοῖς ᾗ αὐτά. vi. 1, 1025, b, 19 [xi. 7, 1064, a, 15, 30]: περὶ γὰρ τὴν τοιαύτην ἐστὶν οὐσίαν [ἡ φυσικὴ] ἐν ῃ· ἡ ἀρχὴ τῆς κινήσεως καὶ στάσεως ἐν αὐτῇ (or l. 26: περὶ τοιοῦτον ὂν ὅ ἐστι δυνατὸν κινεῖσθαι). It is indifferent whether nature is described as the substratum of motion merely, or of rest as well, since, according to Aristotle, rest (ἠρεμία, στάσις) belongs as an attribute only to those things to which motion belongs, or at least can belong, and is merely στέρησις κινήσεως. *Phys.* iii. 2, 202, a, 3, v 2, 226, b, 12, c. 6 *init.*, vi. 3, 234, a, 32 c. 8 239, a, 13, viii. 1, 251, a, 26.

the character of this 'force' with accuracy. On the one side he considers Nature as a Single Being, attributing to her a life which permeates the world throughout,[1] and a definite design which determines and unifies all its parts. He talks of the aims which she attempts to realise in her creations, although the properties of matter often thwart her purpose. In a word, he uses expressions that can scarcely be explained except by the analogy of the human soul and the Platonic *anima mundi*,[2] although he distinctly argues against this idea as conceived by Plato. Though he remarks that the designs of Nature are not determined by deliberation like those of an artist,[3] and though in general we cannot attribute to him any real and intentional personification of Nature, yet the analogy remains.[4] On the other side, however, he undoubtedly regards living beings as individual substances. He ascribes an individual principle of life to them, and he never indicates, or sets himself to discover, how this principle is related to the single force of Nature. Nor does he teach us how Nature is related to the divine causality.[5] When insisting upon the exact significance of divinity, he denies it to any but rational beings;[6]

[1] See the end of this chapter.

[2] Proofs of this are innumerable; it will suffice to refer to the discussion of design in nature which follows in the text.

[3] As will be shown in its proper place.

[4] By 'analogy' is meant, not identity, but similarity.

[5] Cf. with what follows BRANDIS, iii. a, 113 sqq.

[6] As in *Part. An.* ii. 10, 656, a, 7: ἢ γὰρ μόνον μετέχει [τὸ τῶν ἀνθρώπων γένος] τοῦ θείου τῶν ἡμῖν γνωρίμων ζῴων ἢ μάλιστα πάντων. iv. 10, 686, a, 27: man stands upright διὰ τὸ τὴν φύσιν αὐτοῦ καὶ τὴν οὐσίαν εἶναι θείαν· ἔργον δὲ τοῦ θειοτάτου τὸ νοεῖν καὶ φρονεῖν. *Eth. N.* x. 7, 1177, a, 13 sqq. (cf. p. 165, n. 1): νοῦς is the divine in man, and therefore the highest activity is the theoretic.

and from this point of view he will not allow that Nature as a whole is divine, but only demonic.[1] Yet there are other passages in which he seems to follow the popular theology of the Greeks, who recognised and revered an immediate exhibition of divine force in natural phenomena. Nature and God are so used synonymously,[2] and a share in divinity is conceded to all natural existences, however trivial.[3] Indeed, this vacillation of view is deeply rooted in Aristotle's philosophy. So far as God is the first cause of motion, all motions in the universe must proceed from Him; natural forces can only be an emanation of his force, and natural causes a manifestation of his causality. On the other hand, if we confine the functions of the *primum movens* to setting the outer sphere of heaven in motion, these conclusions are impossible. If even in the heavenly sphere we have to assume in addition to the Supreme Mover a series of subordinate and eternal beings, it is still more necessary in order to explain the much greater variety of movements in the realm of nature to assume a train of independent substances endowed with motive power of their own. How the harmony of these movements or their conjunction in an orderly system is effected, it is hard to say. It cannot be by the

[1] *Divin. p. S.* c. 2, 463, b, 12: since beasts also dream, dreams cannot be divine; they may, however, be demoniacal; ἡ γὰρ φύσις δαιμονία, ἀλλ' οὐ θεία.

[2] *De Cœlo*, i. 4 *fin.*: ὁ θεὸς καὶ ἡ φύσις οὐδὲν μάτην ποιοῦσιν. *Gen. et Corr.* ii. 10, 336, b, 27 sqq. (see next chapter, *infra*). *Polit.* vii. 4, 1326, a, 32: θείας γὰρ δὴ τοῦτο δυνάμεως ἔργον, ἥτις καὶ τόδε συνέχει τὸ πᾶν. *Eth. N.* x. 10, 1179, b, 21: τὸ μὲν οὖν τῆς φύσεως [the moral disposition] . . . διά τινας θείας αἰτίας τοῖς ὡς ἀληθῶς εὐτυχέσιν ὑπάρχει. The θεῖαι αἰτίαι correspond here to the Platonic θεία μοῖρα, as to which see ZELLER's *Plato* and cf. p. 402 sqq. *supra*.

[3] *Eth. N.* vii. 14, 1153, b, 32: πάντα γὰρ φύσει ἔχει τι θεῖον.

natural operation of the *primum movens* upon the world. Aristotle's philosophy, moreover, excludes the conception of God's immediate interference in the course of the universe; and it would be illegitimate to attribute to Aristotle the popular belief in Providence, on the strength of a passing allusion to it in his writings.[1] Consequently it remains in obscurity whether we are to regard Nature as a single force or as an assemblage of forces, as something independent or as an emanation from the divine activity; or, on the other hand, whether we ought to combine these two points of view, and, if so, how we ought to do it. But meantime we may permit Aristotle further to unfold his view of Nature.

The most important idea with which we have to deal in the Philosophy of Nature is that of Motion. In our earlier researches we had to examine this idea in its general bearing; therefore what now remains is that we should supplement our previous conclusions with an analysis of physical motion in its stricter and more special sense.

Motion was defined generally on p. 380 sq. as the actualisation of what exists potentially. By analysing the different sorts of Motion we arrive at the special definition of its physical character. Aristotle distin-

[1] *Eth. N.* x. 9, 1179, a, 22: ὁ δὲ κατὰ νοῦν ἐνεργῶν καὶ τοῦτον θεραπεύων καὶ διακείμενος ἄριστα καὶ θεοφιλέστατος ἔοικεν εἶναι· εἰ γάρ τις ἐπιμέλεια τῶν ἀνθρωπίνων ὑπὸ θεῶν γίνεται, ὥσπερ δοκεῖ, καὶ εἴη ἂν εὔλογον χαίρειν τε αὐτοὺς τῷ ἀρίστῳ καὶ τῷ συγγενεστάτῳ (τοῦτο δ' ἂν εἴη ὁ νοῦς) καὶ τοὺς ἀγαπῶντας μάλιστα τοῦτο καὶ τιμῶντας ἀντευποιεῖν ὡς τῶν φίλων αὐτοῖς ἐπιμελουμένους καὶ ὀρθῶς τε καὶ καλῶς πράττοντας. ὅτι δὲ πάντα ταῦτα τῷ σοφῷ μάλισθ' ὑπάρχει, οὐκ ἄδηλον. θεοφιλέστατος ἄρα. It is obvious that Aristotle is here arguing from popular conceptions; he himself ascribes to God no external operation. Cf. pp. 389 sqq. *supra*.

guishes three kinds: quantitative motion, or increase and decrease; qualitative motion, or alteration; and motion in space, or locomotion—to which may be added as a fourth kind, birth and destruction.[1] Now all these kinds of movement may be ultimately resolved into the third kind—Motion in Space. For, if we examine them more closely, we find that increase or growth, to begin with, consists in the addition of fresh material to matter which has already received a certain form: the increment is potentially but not actually identical with that which it augments, and assumes its form; in other

[1] *Phys.* v. 1, 225, a, c. 2, 226, a, 23 (*Metaph.* xi. 11, 12), cf. *Metaph.* viii. 1, 1042, a, 32, xii. 2 *init.*, *Phys.* viii. 7, 260, a, 26, 261, a, 32 sqq., vii. 2 *init.* *Gen. et Corr.* i. 4, 319, b, 31; *De An.* i. 3, 406, a, 12,; *Long.* v. 3, 465, b, 30; *De Cœlo*, iv. 3, 310, a, 25. *Cat.* c. 14 *init.* Aristotle here distinguishes generally three kinds of change (μεταβολή): transition from being to being, from being to not-being, and from not-being to being. The first is *motion* in the stricter sense, the second *destruction*, the third *origination*. Motion he then divides into the kinds mentioned in the text (κίνησις κατὰ μέγεθος, κατὰ πάθος and κατὰ τόπον, as he calls them *Phys.* viii. 7, 260, b, 26), and, taking birth and destruction again together, thus enumerates four kinds of μεταβολή: ἡ κατὰ τὸ τί (γένεσις καὶ φθορά), ἡ κατὰ τὸ ποσὸν (αὔξησις καὶ φθίσις), ἡ κατὰ τὸ ποιὸν (ἀλλοίωσις), ἡ κατὰ τὸ ποῦ (φορά). That these are the only categories under which motion can be thought, is shown *Phys.* v. 2, where change of substance (birth and destruction) is not admitted to be motion (similarly c. 5, 229, a, 30; cf. SIMPL. *Phys.* 201, b, who extends the statement to the Peripatetic school in general, remarking, however, that Theophrastus, among others, did not keep strictly to this use of language); elsewhere Aristotle treats this also as a form of motion, and uses 'motion' as synonymous with 'change.' See p. 382, n. 3, *supra*. *Phys.* vii. 2, 243, a, 21 (cf. *De An.* i. 3, 406, a, 4) distinguishes two kinds of locomotion: that which is self-originated and that which is caused by something else. The latter again is of four kinds: ἕλξις, ὦσις, ὄχησις, δίνησις, the third and fourth of which, however, may be resolved into the first two. Cf. viii. 10, 267, b, 9 sqq.; *De An.* iii. 10, 433, b, 25; *Ingr. An.* c. 2, 704, b, 22 (*Mot. An.* c. 10, 703, a, 19); the statement in *Rhet.* i. 5, 1361, b, 16, is less exact. Ὦσις is either ὦσις in the stricter sense, or πληγή; *Meteor.* iv. 9, 386, a, 33; *De An.* ii. 8, 419, b, 13, and cf. *Probl.*

words, such increase is an augmentation of matter, the form remaining constant. Similarly decrease is the diminution of matter without change of form.[1] Quantitative alteration, therefore, implies both qualitative movement and locomotion.[2] But the second of these two is prior to the first; for every transformation results from the coincidence of something which produces it with something in which it is produced, of an active and a passive element[3] This coincidence, then, can only take place by local contact, for (although the converse is not necessarily true) the patient must always be touched by the agent, and contact cannot be effected without locomotion.[4]

Even the last species of change, birth and destruction, is eventually founded upon movement in space. If one were to assume an absolute beginning or end of existence, such a transmutation could not, indeed, be called a movement, since in such a case the substratum of the movement would itself begin or end. But birth and annihilation in this absolute sense are really impossible.[5] Everything starts from

xxiv. 9, 936, b, 38. IDELER, *Arist. Meteor.* ii. 509.

[1] *Vide* the full discussion in *Gen. et Corr.* i. 5.

[2] *Phys.* viii. 7, 260, a, 29, b. 13.

[3] Ποιεῖν in the physical sense is synonymous to Aristotle with ἀλλοιοῦν, πάσχειν with ἀλλοιοῦσθαι. Cf. *Phys.* iii. 3 *fin.*: ἀλλοίωσις μὲν γὰρ ἡ τοῦ ἀλλοιωτοῦ, ᾗ ἀλλοιωτὸν, ἐντελέχεια· ἔτι δὲ γνωριμώτερον ἡ τοῦ δυνάμει ποιητικοῦ καὶ παθητικοῦ ᾗ τοιοῦτον. *Gen. et Corr.* i. 6, 322, b, 9, 323, a, 17: οὐ γὰρ οἷόν τε πᾶν τὸ κινοῦν ποιεῖν, εἴπερ τὸ ποιοῦν ἀντιθήσομεν τῷ πάσχοντι· τοῦτο δ' οἷς ἡ κίνησις πάθος· πάθος δὲ καθ' ὅσον ἀλλοιοῦται μόνον. On a further meaning of ποιεῖν see in n. 1 to p. 400.

[4] *Phys.* viii. 7, 260, b, 1 sqq., where it is further remarked that all qualitative changes are ultimately resolvable into rarefaction and condensation, which involve change of place. *Gen. et Corr.* i. 6, 322, b, 21 sqq. c. 9, 327, a, 1, cf. p. 386.

[5] *Gen. et Corr.* i. 3, among other arguments, shows that matter would in the end be all used up, if destruction were to

being of some sort, and is resolved into being again.[1] It is only a particular object, as such, that begins and ends its existence Its beginning is the end, and its end the beginning, of something else.[2] Consequently, in so far as generation and destruction are different from change, this difference only affects the individual object. The individual changes when it survives as a whole, although its qualities alter, but it is generated or destroyed when it, as a whole, begins or ceases to exist.[3] If on the contrary we regard the universe and not the individual, then generation and destruction coincide partly with composition and division, partly with the transmutation of materials.[4] Now both of these processes are occasioned by movement in space.[5] Everything that comes into being has its cause; all 'becoming' implies a 'being' by which it is

mean actual annihilation (318, a, 13).

[1] *Phys.* viii. 7, 261, a, 3: *δόξειέ γ' ἂν ἡ γένεσις εἶναι πρώτη τῶν κινήσεων διὰ τοῦτο, ὅτι γενέσθαι δεῖ τὸ πρᾶγμα πρῶτον. τὸ δ' ἐφ' ἑνὸς μὲν ὁτουοῦν τῶν γινομένων οὕτως ἔχει, ἀλλ' ἕτερον ἀναγκαῖον πρότερόν τι κινεῖσθαι τῶν γινομένων ὂν αὐτὸ καὶ μὴ γινόμενον, καὶ τούτου ἕτερον πρότερον.* Cf. p. 381–7.

[2] *Gen. et Corr.* i. 3, 318, a, 23: *διὰ τὸ τὴν τοῦδε φθορὰν ἄλλου εἶναι γένεσιν, καὶ τὴν τοῦδε γένεσιν ἄλλου εἶναι φθορὰν ἄπαυστον ἀναγκαῖον εἶναι τὴν μεταβολήν.* *Ibid.* 319, a, 20, ii. 10, 336, b, 24. Cf. p. 387.

[3] *Gen. et Corr.* i. 2, 317, a, 20: *ἔστι γὰρ γένεσις ἁπλῆ καὶ φθορὰ οὐ συγκρίσει καὶ διακρίσει, ἀλλ' ὅταν μεταβάλλῃ ἐκ τοῦδε εἰς τόδε ὅλον.* *Ἀλλοίωσις* is produced by change in the *πάθη*, birth and destruction by change in the *ὑποκείμενον*, whether in respect of its form (*λόγος*) or its matter; c. 4, 319, b, 10: *ἀλλοίωσις μέν ἐστιν, ὅταν ὑπομένοντος τοῦ ὑποκειμένου, αἰσθητοῦ ὄντος, μεταβάλλῃ ἐν τοῖς αὐτοῦ πάθεσιν . . . . ὅταν δ' ὅλον μεταβάλλῃ μὴ ὑπομένοντος αἰσθητοῦ τινος ὡς ὑποκειμένου τοῦ αὐτοῦ . . . γένεσις ἤδη τὸ τοιοῦτον, τοῦ δὲ φθορά.*

[4] Cf. *Meteor.* iv. 1, 378, b, 31 sqq., where he argues that generation is effected by definite materials becoming transmuted and determined in certain ways by the agency of efficient forces; destruction, on the other hand, by the conquest of the passive matter over the determining form.

[5] Cf. *Phys.* viii. 7, 260, b, 8:

produced. Since this, as we saw in the case of alteration, cannot operate without movement in space, such movement must precede all generation.[1] Again, if movement in space precedes generation, it must of necessity precede growth, change, decrease, and destruction; since these processes can only be carried on in that which has previously been generated.[2] Therefore this species of motion is the first in the order of causality, as well as in the order of time and in the logical order also.[3]

Notwithstanding what has just been said, Aristotle is far from explaining natural phenomena by the merely mechanical principle of motion in space, as the Atomists had done. Even purely physical occurrences cannot, in his opinion, be satisfactorily accounted for by this method, seeing that many of them are only to be conceived as modes of qualitative alteration, or the transmutation of materials.[4] Physics do not by any means exhaust the conception of Nature. Final Causes

*πάντων τῶν παθημάτων ἀρχὴ πύκνωσις καὶ μάνωσις . . . πύκνωσις δὲ καὶ μάνωσις σύγκρισις καὶ διάκρισις, καθ' ἃς γένεσις καὶ φθορὰ λέγεται τῶν οὐσιῶν. συγκρινόμενα δὲ καὶ διακρινόμενα ἀνάγκη κατὰ τόπον μεταβάλλειν.*

[1] *Phys. ibid.* 261, a, 1 sqq. *Gen. et Corr.* ii. 10 *init.*

[2] *Phys. ibid.* b, 7. It is here further pointed out in proof of the priority of 'movement in space,' that, while it is presupposed by the others, it does not presuppose them. Without the movement of the heavens, neither generation nor destruction, neither growth nor material change, could take place. Movement itself, on the other hand, is independent of these conceptions, and none of them are applicable to the heavens (260, b, 19 sqq. *Gen. et Corr.* ii. 10 *init.*). So also movement in space is the only one of these conceptions which has to do with the eternal, and is of infinite duration (260, b, 29, 261, a, 27 sqq.). Aristotle also argues that because it is the last in time in respect to individual existences, it must be the first in nature (260, b, 30, 261, a, 13); and he holds that it causes the least change in the nature of the thing moved, and is the motion which the self-moving produces in preference to every other (261, a, 20).

[3] *Ibid.* 260, b, 15 sqq.

[4] See p. 304, n. 3, and p. 306, n. 5.

rise above the material causes which subserve them; and these are not provided for in the philosophy of a Democritus.[1] Lastly, if it be true that 'becoming' is a transition from potentiality to actuality, or a process of development, and that the importance of Aristotle's natural philosophy consists, to a great extent, in having first made this notion of development possible and consciously given it the foremost place, it is clear that Aristotle could not favour opinions which started with an express denial of any 'becoming' or qualitative alteration, and left us nothing but a movement in space of unalterable materials. Therefore qualitative alteration must be added to locomotion, even in the domain of matter, as a second source of natural occurrences: but over against both, Aristotle sets the teleology of nature, which uses as means to its end all that is corporeal and determined by natural necessity.

Next to Motion in Space, and not without direct relation to it, come investigations by which Aristotle further illustrates the idea of motion in his Physics: and these include discussions upon the Infinite, Space, Time, the Unity and Continuity of Motion,[2] &c.

The Infinite[3] had played an important part in pre-

[1] See p. 307, n. 4, and cf. p. 359, sq. *supra*.

[2] He describes those conceptions, indeed, generally, iii. 1, 200, b, 15 sqq. c. 4 *init.*, as belonging to the discussion upon motion, and deals with the first three in bks. iii. and iv. before the section upon the kinds of motion; but the way in which he treats them shows that he is thinking chiefly of locomotion.

[3] The discussion of this conception Aristotle introduces in *Phys.* iii. 1, 200, b, 15, with the words: δοκεῖ δ' ἡ κίνησις εἶναι τῶν συνεχῶν, τὸ δ' ἄπειρον ἐμφαίνεται πρῶτον ἐν τῷ συνεχεῖ; c. 4 *init.* he remarks that natural science deals with masses, motion, and time, each of which is either finite or infinite. On what follows see ZELLER, *Ph. d. Gr.* pt. i. 186.

Aristotelian philosophy. Plato and the Pythagoreans went so far as to make it an element of all things, and therefore a substance. Aristotle begins by proving this to be impossible: 'infinity' does not belong to the order of substances but of qualities.[1] Then he shows that an 'infinite magnitude' is inconceivable. For suppose it to be a body, body is that which is limited by superficies; or if it be a number, numbers are capable of being counted, and that which can be counted is not infinite.[2] Lastly, and more especially, an infinite body could neither be composite nor simple. It could not be composite, since, the elements being limited in number, an infinite body could not be made up of them unless one of them were infinite in magnitude, and such an element would leave no room for the rest.[3] And to think of it as simple is equally impossible. In the first place, as far as this world is concerned, no bodies exist except the four elementary ones, nor can there be any out of which alone everything could come, since all becoming moves between two opposites; and if there be several primitive bodies, it is quite impossible that one should be infinite.[4] Again, every body has its natural place, in which it abides, and to which it tends; and this law determines the difference in weight between bodies; every body without exception must exist in a definite space, in a locality; but in the infinite there is no definite locality, no distinction of up and down, centre and circumference, before and after, right and left.[5] Moreover, whereas it is manifest that bodies

[1] *Phys.* iii. 5, 204, a; see p. 312, n. 2, and p. 325, n. 2, *supra*.

[2] *Phys. ibid.* 204, b, 4.

[3] *Ibid.* 204, b, 11, cf. *De Cœlo*, i. 7 *init.*

[4] *Phys. ibid.* 204, b, 22.

[5] *Ibid.* 205, a, 8 to end of chap., iv. 8, 215, a, 8. *De Cœlo*, i. 6

either move in a circle like the celestial spheres or in straight lines up and down like the elemental bodies, infinity admits of neither of these movements. The former is impossible, because circles are by their nature circumscribed, and circular movement is rotation round a centre, whereas in the infinite there is no centre;[1] the latter, because lineal motion has a starting point and end.[2] Indeed, 'infinity' could not move at all, since it would take infinite time to traverse the smallest conceivable space.[3] Finally, Aristotle uses an argument conclusive with Greeks, who could not imagine formless being: the infinite, as such, is incomplete and without shape—we call that infinite the magnitude of which is indeterminable, which is never finished and complete, which cannot be limited in such a way as not to leave some portion of it outside.[4] The infinite first becomes a whole and complete when it is enclosed by means of form. But the world cannot be conceived except as complete and a whole.[5] It is therefore impossible that

*init.* c. 7, 274, b, 8, 29, 276, b, 6 sqq. In c. 6, 273, a, 21 sqq., the same conclusion is reached by showing that infinite bodies must be infinitely heavy or light, but an infinitely heavy or an infinitely light body is an impossibility, since it must either exhibit infinite speed or be absolutely immovable.

[1] As is shown, at unnecessary length, *De Cœlo*, i. 5, 271, b, 26 sqq. 272, b, 17 sqq. c. 7, 275, b, 12.

[2] *De Cœlo*, i. 6 *init.* Also c. 7, 275, b, 15 sqq.

[3] *Ibid.* c. 6, 272, a, 21 sqq. *Phys.* vi. 7, 238, a, 36.

[4] Aristotle's words are: οὐ γὰρ οὗ μηδὲν ἔξω, ἀλλ' οὗ ἀεί τι ἔξω ἐστί, τοῦτ' ἄπειρόν ἐστιν, where, however, the antithesis is merely verbal, οὗ μηδὲν ἔξω meaning 'that beyond which nothing exists,' οὗ ἀεί τι ἔξω, on the other hand, 'that of which a part always remains beyond.'

[5] *Phys.* iii. 6: see at p. 350, *sup.* *Gen. An.* i. 715, b, 14: ἡ δὲ φύσις φεύγει τὸ ἄπειρον· τὸ μὲν γὰρ ἄπειρον ἀτελές, ἡ δὲ φύσις ἀεὶ ζητεῖ τέλος The objection (*Phys.* iii. 4, 203, b, 22 sqq.) that infinite space presupposes also an infinite body, he afterwards sets aside (iv. 5, 212, a, 31, b, 8, 16 sqq.;

the infinite, as such, should really exist as an interminable magnitude.[1]

Yet we cannot entirely do without it. Time, and motion, which is measured by time, are without beginning or end. Magnitudes are capable of infinite division, number of infinite increase.[2] Hence we

cf. *De Cælo*, i. 9, see p. 395, n. 6 *supra*) by his peculiar definition of space as the 'boundary between the enclosing and the enclosed. The boundary of the world itself is, therefore, according to his view, not in space; beyond it there is no space either void or occupied.

[1] *Phys*. iii. 5 *fin.*: ὅτι μὲν οὖν ἐνεργείᾳ οὐκ ἔστι σῶμα ἄπειρον, φανερὸν ἐκ τούτων. c. 6, 206, a, 16: τὸ δὲ μέγεθος ὅτι κατ' ἐνέργειαν οὐκ ἔστιν ἄπειρον, εἴρηται; *ibid*. b, 24.

[2] *Phys*. iii. 6, *init.*: ὅτι δ' εἰ μή ἐστιν ἄπειρον ἁπλῶς, πολλὰ ἀδύνατα συμβαίνει, δῆλον. τοῦ τε γὰρ χρόνου ἔσται τις ἀρχὴ καὶ τελευτή, καὶ τὰ μεγέθη οὐ διαιρετὰ εἰς μεγέθη, καὶ ἀριθμὸς οὐκ ἔσται ἄπειρος. Aristotle proves in particular: (1) the eternity of time, and with it the eternity of motion which is measured by time. Besides the passages quoted p. 388, n. 1, see *Phys*. viii. 1, 251, b, 10 sqq. and cf. *Metaph*. xii. 6, 1071, b, 7. He argues that as every present is the middle point between the past and the future, and every moment is a present, it is wholly impossible to conceive of any moment of time which has not a before and after, and therefore of any which could be a first or a last moment, a beginning or an end of time. (2) He proves the infinite divisibility of magnitudes, by showing that nothing which is continuous, whether it be spatial size, or time, or motion, can consist of what is indivisible. Continuous magnitude can only be constituted (according to *Phys*. v. 3, 227, a, 10) by such elements as have a common boundary, and, moreover, lie outside one another; indivisible magnitudes, on the other hand, must either lie wholly outside one another, in which case they would have no point of contact, or must wholly coincide (*Phys*. vi. 1 *init*., cf. *Gen. et Corr*. i. 2, 317, a, 2 sqq., *De Cælo*, iii. 8, 306, b, 22). The assumption of indivisible bodily surfaces or lines is not only incompatible with the fundamental principles of mathematics (*De Cælo*, iii. 1, 298, b, 33 sqq. c. 5, 303, a, 20, c. 7, 306, a, 26: cf. the treatise Π. ἀτόμων γραμμῶν), but it would likewise make the most universal of all physical phenomena, viz. motion, impossible, for, magnitude and time being alike indivisible, it is impossible to traverse one part before another. In respect, therefore, of each of the indivisible elements—and accordingly also of the whole which is constituted by them—motion could only be predicated as a thing of the past, never as a thing of the present (*Phys*. vi. 1, 231, b, 18 sqq.; cf. c. 2, 233, a, 10 sqq. c. 9, 239, b, 8, 31), and all difference of velocity must also in like manner vanish (*ibid*. c. 2, 233, b, 15 sqq.)

must conclude that the infinite exists in one sense and not in another: or in other words, that it has a potential but not an actual existence. The divisibility of magnitudes in space is indefinite; yet we may not therefore argue that there is an infinitely small particle. The multiplication of numbers has no limit; yet there is no infinitely great number.[1] In a word, the infinite can never be represented in actuality. It is always potential, and in its two manifestations takes opposite directions—extension being capable of infinite division, but not of infinite augmentation: number, on the other hand, of infinite augmentation, but not of infinite division, since the unit is the smallest number.[2] Real infinity is only possible in incorporeal substance—

Again, all change is excluded in things indivisible, for change involves division between an earlier and a later condition (*Phys.* vi. 4 *init.*). In particular, when we come to the indivisible elementary bodies and surfaces of Democritus and Plato, we shall find these beset by a whole series of new difficulties in addition to the above. (3) Lastly, as there is no highest number, number is capable of infinite multiplication. This, however, has never been disputed, and therefore requires no proof.

[1] *Phys.* iii. 6, 206, a, 12 sqq.: *πῶς μὲν ἔστι [τὸ ἄπειρον], πῶς δ' οὔ. λέγεται δὴ τὸ εἶναι τὸ μὲν δυνάμει τὸ δὲ ἐντελεχείᾳ, καὶ τὸ ἄπειρον ἔστι μὲν προσθέσει ἔστι δὲ καὶ ἀφαιρέσει. τὸ δὲ μέγεθος ὅτι μὲν κατ' ἐνέργειαν οὐκ ἔστιν ἄπειρον, εἴρηται, διαιρέσει δ' ἐστίν· οὐ γὰρ χαλεπὸν ἀνελεῖν τὰς ἀτόμους γραμμάς· λείπεται οὖν δυνάμει εἶναι τὸ ἄπειρον.* Only we must not suppose that this potentiality can ever become actual, *ὥστε τὸ ἄπειρον οὐ δεῖ λαμβάνειν ὡς τόδε τι ... ἀλλ' ἀεὶ ἐν γενέσει ἢ φθορᾷ,* &c.; c. 7, 207, b, 11 (on the infinity of number): *ὥστε δυνάμει μέν ἐστιν, ἐνεργείᾳ δ' οὔ· ἀλλ' ἀεὶ ὑπερβάλλει τὸ λαμβανόμενον παντὸς ὡρισμένου πλήθους. ἀλλ' οὐ χωριστὸς ὁ ἀριθμὸς οὗτος τῆς διχοτομίας, οὐδὲ μένει ἡ ἀπειρία ἀλλὰ γίνεται, ὥσπερ καὶ ὁ χρόνος καὶ ὁ ἀριθμὸς τοῦ χρόνου.* It is shown also, *Gen. et Corr.* i. 2, 316, a, 14 sqq., with respect to infinite divisibility, that it never can be actually realised in fact and therefore exists only potentially. It is just because it is merely *ἐν δυνάμει* that the Infinite is reckoned among material causes (see p. 350, n. 1, *supra*).

[2] *Phys.* iii. 7. Time, however, even Aristotle holds to be infinite in both directions.

as an infinity of force. This also, however, is manifested only in a series which is never exhausted, and in the endless motion of the world.[1]

In proceeding to the notion of Space, we may remark, in the first place, that Aristotle did not regard it as the boundary-line or shape of individual bodies; for in this case bodies would not move *in* a space, but *with* their space, and several bodies could not successively enter the same space. No more can it be identified with the matter of bodies, since this also is inseparable from the body which is in space: nor is it that which circumscribes, but that which is circumscribed. In the third place, we may not regard it as the distance between the boundaries of bodies, since this distance changes with the bodies, whereas space remains always the same, whatever may exist and move within it.[2] Space may more properly be defined as the limit of the surrounding body in respect to that which it surrounds.[3] The place of each particular body[4] is therefore formed by the (internal) limits of that which surrounds it, and space in general by the limits of the world.[5]

[1] See notes to p. 395, *supra*.

[2] *Phys.* iv. 1–4, cf. esp. 211, b, 5 sqq., 209, b, 21 sqq.

[3] Τὸ πέρας τοῦ περιέχοντος σώματος, or, more accurately, τὸ τοῦ περιέχοντος πέρας ἀκίνητον πρῶτον. Cf. *De Cælo*, iv. 3, 310, b, 7.

[4] Ἴδιος τόπος, as it is called *Phys.* iv. 2 *init.*, as opposed to τόπος κοινός. It is also called ὁ πρῶτος τόπος ἐν ᾧ ἐστὶν ἕκαστον; *ibid.* c. 4, 211, a, 28.

[5] *Phys.* iv. 5, 212, a, 31, b, 18. It is strange that space should here be called as in c. 4, 212, a, 20 (cf. n. 3, *supra*) τοῦ οὐρανοῦ τι τὸ ἔσχατον καὶ ἁπτόμενον τοῦ κινητοῦ σώματος πέρας ἠρεμοῦν; for we are told (*v.* below and p. 377) that the vault of heaven moves continually in a circle. Aristotle means, however (c. 4, 212, a, 18 sqq. c. 5, 212, a, 31 sqq., viii. 9, 265, b, 1 sqq.) that just as in the case of a ball which spins round its own axis without otherwise moving the circumference is as

Aristotle obtains the notion of Time by a similar process.[1] Time cannot exist without motion, since it is only by the movement of thoughts that we perceive it. Yet it is not motion, since motion itself is inseparable from the object moved, and therefore is in one case faster, in another slower; whereas time is universally the same, and its movement is always equally fast. It follows that time stands in a special relation to motion, but is different from it. It is the measure or the number of motion in respect to what is earlier and later.[2] The unit of this number is the 'now.' Time is occasioned by the movement of the 'now.' It is this that makes time at once a continuous and a discrete magnitude: continuous, in so far as 'now' is the same in the present moment as it was in the past; discrete, in so far as its being is different in each moment.[3]

These notions of Time and Space involve the infinity of the former and the finitude of the latter; and we already know Aristotle's further reasons for this distinction between them.[4] In like manner his concep-

stationary as the centre, the circular motion affecting merely its parts, since only those change their position, so the highest heavens move only in a certain respect, and are in space only *κατὰ συμβεβηκός*, and in so far as their parts move and are in space (*De Cœlo*, v. 5, which passage BRANDIS, ii. b, 748, wrongly suspects). In a like sense it is said (212, a, 18) that the river is stationary, and that only the individual waves move.

[1] *Phys.* iv. 10, 11.

[2] Ἀριθμὸς κινήσεως κατὰ τὸ πρότερον καὶ ὕστερον, c. 11 *fin.*; *De Cœlo*, i. 9, 279, a, 14.

[3] *Phys.* iv. c. 11, cf. p. 220, a, 5: συνεχής τε δὴ ὁ χρόνος τῷ νῦν καὶ διήρηται κατὰ τὸ νῦν; 219, b, 9: ὥσπερ ἡ κίνησις ἀεὶ ἄλλη καὶ ἄλλη, καὶ ὁ χρόνος· ὁ δ' ἅμα πᾶς χρόνος ὁ αὐτός· τὸ γὰρ νῦν τὸ αὐτὸ ὅ ποτ' ἦν· τὸ δ' εἶναι αὐτῷ ἕτερον. *Ibid.* c 13, *init.*: τὸ δὲ νῦν ἐστι συνέχεια χρόνου· ... συνέχει γὰρ τὸν χρόνον τὸν παρελθόντα καὶ ἐσόμενον, καὶ ὅλως πέρας χρόνου ἐστίν· . . . διαιρεῖ δὲ δυνάμει· καὶ ᾗ μὲν τοιοῦτο, ἀεὶ ἕτερον τὸ νῦν, ᾗ δὲ συνδεῖ, ἀεὶ τὸ αὐτό . . . ἔστι δὲ ταὐτὸ καὶ κατὰ ταὐτὸ ἡ διαίρεσις καὶ ἡ ἕνωσις, τὸ δ' εἶναι οὐ ταὐτό.

[4] Cf. p. 428 sqq., and 387, *supra*. Aristotle, however, here

tion of Space implies the impossibility of a vacuum. If Space is the limit of the enclosing body in relation to the enclosed, we cannot but conclude that there is no space where there is no body: empty space would be an enclosure that encloses nothing. Aristotle tries on this point, with minute and patient arguments, to confute the widely-received assumption of a vacuum, which, owing mainly to the teaching of the Atomists, had become part of the current Natural Philosophy.

The reasons with which they had supported it appear to him inconclusive. Movement does not need to be explained by such an hypothesis, since we can imagine that another body quits the space which the object in motion enters. Condensation may be referred to the exit of air or other matter from the bodies in question; rarefaction to its entrance into them. The expansion which water, for example, experiences when passing into air (that is, into steam) may be explained by the alteration of materials, which necessitates another degree of rarity: or the phenomena of gravity by the tendency of the elements to reach their natural place.[1] The vacuum would rather put a stop to the possibility of motion. Since emptiness yields equally on all sides, one cannot imagine anything capable of determining a body to follow one direction rather than another. It would afford no distinction of natural localities. No special motion could take place in it. On the other hand, it

distinguishes, as Plato had done (*Tim.* 37, D, 38, B), between the endless time in which mutable existence moves, and eternity (αἰών) or the timeless being of the immutable. *Phys.* iv. 12, 221, b, 3. *De Cælo*, i. 9, 279, b, 11–28; see p. 395, n. 6, *supra*.

[1] *Phys.* iv. 7, 214, a, 24 sqq., c. 8 *init.* c. 9.

would be equally impossible, on the hypothesis of infinite vacuity, to assign any reason for rest in Nature. Again, if bodies fall or rise with a rapidity proportioned to the rarity of the medium through which they are moving, everything would have to fall or rise with infinite rapidity through the infinite rarity of the void. On the other hand, if, *ceteris paribus*, greater masses fall or rise quicker than smaller ones because they more easily overcome the withstanding medium, then in the void, where there is no resistance to overcome, the smallest would move as quickly as the greatest. Lastly, how are we to conceive that an empty space exists beyond the space occupied by bodies, since, if a body entered that space, there would then be two spaces, an empty and a full, the one within the other? And what is the use of such a void space, since every body has its own extension?[1] Besides, by maintaining that there is empty space or any space at all beyond the world, one would end in the contradiction of asserting that a body could be where no body can.[2]

If empty Space is impossible, empty Time, filled with no movement, is equally inconceivable, since Time is nothing but the number of motion.[3] Aristotle, in fact, maintains the eternity of motion as having neither be-

[1] *Phys.* iv. 8; cf. *De Cælo*, iv. 2. In estimating the force of these arguments we must, of course, take account of the state of scientific knowledge at the time, and of the presuppositions which were shared by Aristotle and the Atomists alike. See p. 442, *infra*.

[2] *De Cælo*, i. 9, 279, a, 11: ἅμα δὲ δῆλον ὅτι οὐδὲ τόπος οὐδὲ κενὸν οὐδὲ χρόνος ἐστὶν ἔξω τοῦ οὐρανοῦ· ἐν ἅπαντι γὰρ τόπῳ δυνατόν ὑπάρξαι σῶμα· κενὸν δ' εἶναί φασιν ἐν ᾧ μὴ ἐνυπάρχει σῶμα, δυνατὸν δ' ἐστὶ γενέσθαι . . . ἔξω δὲ τοῦ οὐρανοῦ δέδεικται ὅτι οὔτ' ἔστιν οὔτ' ἐνδέχεται γενέσθαι σῶμα.

[3] *Phys.* viii. 1. 251, b, 10: τὸ πρότερον καὶ ὕστερον πῶς ἔσται χρόνου μὴ ὄντος; ἢ ὁ χρόνος μὴ οὔσης κινήσεως; εἰ δή ἐστιν ὁ

ginning nor end.[1] On this point he suggests the remarkable question: whether there could be Time without a soul? And he answers it by saying that Time in its essence is implicit in motion, but that in reality it cannot be without the soul, because number does not exist without a calculator, and reason is the only calculator.[2] But we should make a mistake if we sought to discover in this remark any inclination to the idealist theory of Time which has obtained so vast an importance in modern philosophy. Its apparent bias towards Idealism proceeds from Aristotle's not conceiving the ideas of Time and Space in as pure and abstract a sense as is familiar to us. Although he does not go so far as Plato, who identified Space with extended substance, and Time with the motion of the stars,[3] yet he never attempts to make an accurate distinction between Space and Time

χρόνος κινήσεως ἀριθμὸς ἢ κίνησίς τις, εἴπερ ἀεὶ χρόνος ἐστὶν, ἀνάγκη καὶ κίνησιν ἀΐδιον εἶναι. *Ibid.* l. 26: ἀνάγκη . . . εἶναι ἀεὶ χρόνον. ἀλλὰ μὴν εἴγε χρόνον, φανερὸν ὅτι ἀνάγκη εἶναι καὶ κίνησιν, εἴπερ ὁ χρόνος πάθος τι κινήσεως. *De Cœlo*, i. 9, 279, a, 14: outside the world there is no time, for χρόνος ἀριθμὸς κινήσεως· κίνησις δ' ἄνευ φυσικοῦ σώματος οὐκ ἔστιν. Cf. p. 395, n. 6, *supra*.

[1] See p. 387, *supra*.

[2] *Phys.* iv. 14, 223, a, 16 sqq. esp. l. 25: εἰ δὲ μηδὲν ἄλλο πέφυκεν ἀριθμεῖν ἢ ψυχὴ καὶ ψυχῆς νοῦς, ἀδύνατον εἶναι χρόνον ψυχῆς μὴ οὔσης, ἀλλ' ἢ τοῦτο ὅ ποτε ὂν ἔστιν ὁ χρόνος [apart from the soul time, as such, cannot exist, but only that which constitutes the essence of time, the reality that lies beneath it as the substratum of its existence; *v.* TORSTRIK in *Rh. Mus.* xii. 1857, p. 161 sqq.], οἷον εἰ ἐνδέχεται κίνησιν εἶναι ἄνευ ψυχῆς. Aristotle is not quite consistent in his answers to the question, what faculty of the soul it is that perceives time. According to the above passage and *De An.* iii. 10, 433, b, 5 sqq., we must suppose that it is the reason, and that the sense of time is limited to rational beings. In the *De Mem.* i. 450, a, 9–23, on the other hand, he assigns it to the πρῶτον αἰσθητικὸν, and attributes memory, which involves the perception of time (*ibid.* 449, b, 28), to many of the lower animals (*ibid.* and c. 2, 453, a, 7 sqq. *Hist. An.* i. 1, 488, b, 25).

[3] See ZELL. *Ph. d. Gr.* Abth. i. pp. 613, 684, 2.

as universal forms of sense, and the existence in which they are manifested. We have seen[1] that he cannot conceive of space without physical locality, higher and lower, gravity and levity.[2] He limits existence in space, in its strictest sense, to that which is surrounded by another body different from itself, arguing from this position that there is no space beyond the world, and that the world as a whole is not in space, but only its single parts.[3] In the same way the homogeneous parts of a coherent body, as parts of the whole, are only potentially in space; they are not actually so until separated from the whole.[4] It is the same with Time. Time, being the number of motion, presupposes an object moved on the one hand, and on the other a counting subject. He remarks expressly, however, that when Time is called the number of motion, we must not understand by the word number that by which one counts, but what is counted.[5] Number, that is, must be taken not in its subjective but its objective sense. Far from considering Time as a mere form of our perception, he regards it rather as something pertaining to motion, and, indeed, to the body moved. Outside the world, where bodies cease, Time also ceases to exist.[6]

In the further discussion of Motion which is found in Aristotle's Physics, our attention is chiefly drawn to the points which bear more directly upon his doctrine of the *primum movens* and the structure of the universe. He

[1] P. 428, *supra*.

[2] He says, therefore, *Phys.* iv. 1, 208, b, 8: the movements of simple bodies (fire, earth, &c.) show οὐ μόνον ὅτι ἔστι τι ὁ τόπος, ἀλλ' ὅτι καὶ ἔχει τινὰ δύναμιν (a real significance).

[3] See p. 429, n. 5, *supra*.

[4] *Phys.* iv. 5, 212, b, 4.

[5] *Phys.* iv. 11, 219, b, 5.

[6] *De Cœlo*, i. 9; see p. 435, n. 3, *supra*, and p. 395, n. 6.

defines the meaning of coexistence in space, of contact, of intermediate space, of succession, of continuity, &c.[1] He distinguishes the different relations in which the unity of motion can be spoken of,[2] finding the absolute unity of motion in continuous or unbroken movement—that is, in such as belongs to one and the same object in the same relation at one and the same time.[3] He asks what constitutes uniformity of motion and its opposite:[4] in what cases two movements, or movement and repose, may be said to be opposed to each other; how far the natural or unnatural character of a movement has to be considered in either instance.[5] After proving further that all continuous magnitudes are divisible *ad infinitum*,[6] that time and space in this respect correspond, and that in reality it is only with

[1] *Phys.* v. 3: ἅμα μὲν οὖν λέγεται ταῦτ' εἶναι κατὰ τόπον, ὅσα ἐν ἑνὶ τόπῳ ἐστὶ πρώτῳ, χωρὶς δὲ ὅσα ἐν ἑτέρῳ, ἅπτεσθαι δὲ ὧν τὰ ἄκρα ἅμα, μεταξὺ δὲ εἰς ὃ πέφυκε πρῶτον ἀφικνεῖσθαι τὸ μεταβάλλον . . . ἐφεξῆς δὲ οὗ μετὰ τὴν ἀρχὴν μόνον ὄντος . . . μηδὲν μεταξύ ἐστι τῶν ἐν ταὐτῷ γένει καὶ [join with ταὐτῷ] οὗ ἐφεξῆς ἐστίν. . . . ἐχόμενον δὲ [immediately successive] ὃ ἂν ἐφεξῆς ὂν ἅπτηται . . . . λέγω δ' εἶναι συνεχὲς [continuous], ὅταν ταὐτὸ γένηται καὶ ἓν τὸ ἑκατέρου πέρας οἷς ἅπτονται. In the συνεχὲς, therefore, there must be unity as well as contact. On ἁφὴ cf. *Gen. et Corr.* i. 6, 323, a, 3.

[2] *Phys.* v. 4 *init.*: motion is either γένει or εἴδει or ἁπλῶς μία. For other senses in which motion is said to be 'one,' see *ibid.* 228, b, 11 sqq. Cf. vii. 1, 4, pp. 125, 139, of Bekker's smaller edition.

[3] *Phys.* v. 4, 227, b, 21: ἁπλῶς δὲ μία κίνησις ἡ τῇ οὐσίᾳ μία καὶ τῷ ἀριθμῷ, the latter is the case when not only the thing moved and the kind of its motion (ἀλλοίωσις, φορὰ, &c., together with their special varieties) but also the time is the same, 228, a, 20: τήν τε ἁπλῶς μίαν [κίνησιν] ἀνάγκη καὶ συνεχῆ εἶναι . . . καὶ εἰ συνεχὴς, μία.

[4] *Ibid.* b, 15 sqq.

[5] *Phys.* v. 5, 6.

[6] *Ibid.* vi. 1 sq.; see p. 430, n. 2, *supra*. The indivisible unit of space and time (the point and the moment) is therefore (as is shown *De An.* iii. 6, 430, b. 17 sqq.) never found existing actually and independently as a χωριστὸν, but only as contained potentially in the divisible, and not ever known except as a negation.

finite spaces traversed in a finite time that motion has to do—whereas infinite spaces are only said to be traversed in the same sense in which the time of motion is infinite[1]—he establishes the indivisibility of the present moment, and concludes that in this unit neither motion nor rest are possible.[2] He discusses the divisibility of motion and of the body moved,[3] remarking that every alteration attains completion in an indivisible moment, but that the moment of its beginning is never capable of being accurately determined.[4] He shows that it is equally impossible to measure a merely finite space in infinite time or an infinite space in finite time, and consequently that an infinite magnitude cannot move any distance at all in a finite time.[5] These conclusions supply him with the means of refuting Zeno's arguments against motion,[6] and enable him to prove that the indivisible can neither move nor change in any way.[7] Finally, he prepares the way for investigating the movement of the universe and its cause, by asking[8] whether there can be a single movement of infinite duration. After establishing the eternity of motion and

[1] *Phys.* vi. 2, 233, a, 13 sqq.

[2] *Ibid.* c. 3, and again c. 8, where he adds: in the transition from motion to rest, the motion lasts as long as the transition lasts; while, therefore, a thing is coming to rest, it is moving still.

[3] *Ibid.* c. 4 (cf. also p. 430, n. 2). Motion according to this passage is divisible in a double sense: first in respect of the time occupied, and secondly in respect of the object moved.

[4] *Ibid.* c. 5, 6. We see from SIMPL. *Phys.* 230, a, m. 231, b, m. and THEMIST. *Phys.* 55, a, m., that difficulties had already suggested themselves to Theophrastus and Eudemus in connection with this view.

[5] *Phys.* vi. 7; cf. p. 429, n. 3, *supra.* Aristotle shows, *Phys.* viii. 9, 265, b, 16, that his predecessors also treated motion in space as the most primary.

[6] *Phys.* vi. 9, cf. c. 2, 233, a, 21, viii. 8, 263, a, 4, and p. 311, *supra.*

[7] *Phys.* viii. 10.

[8] At the end of this chapter.

the necessity of a *primum movens*, he gives this answer:[1] if there is a continuous and single movement without beginning or end, it must be movement in space, for not only does this precede every other,[2] but every other is a transition between opposites;[3] and where this is the case the first motion ceases at a certain point, at which a new movement may begin in another direction, but one and the same cannot continue without a break.[4] The same argument proves that only circular motion answers all the necessary requirements. If all movement in space must be either in a straight line, or circular, or mixed,[5] a mixed movement could only be of endless duration and continuous if both the others could. Movement in a straight line cannot have this character, since every finite rectilinear movement[6] has terminal points at which it ceases, and though between these terminal points it may be infinitely often repeated, yet these repeated movements do not constitute one continuous motion. Circular motion is, therefore, the only kind of movement which, continuing one and the same in unbroken sequence, can be without beginning and end.[7] It unites the repose of the universe with unceasing motion, since it enables it to move

[1] *Phys.* viii. 1–6; see p. 387 sq. *supra*.

[2] *Phys.* viii. 7; see p. 423 sq. *supra*.

[3] Generation from not-being to being; destruction from being to not-being; increase from less to greater; decrease from greater to less; alteration from one state to another, *e.g.* from water to steam.

[4] *Ibid.* 261, a, 31 sqq.

[5] Among mixed forms of motion we must in this division reckon all curves except the circle.

[6] An infinite one is impossible, not only in itself (see p. 430, n. 2, *supra*) but also because the world is not infinite.

[7] All this is explained at length, *Phys.* viii. 8, 261, a, 27–263, b, 3, 264, a, 7 sqq. c. 9 *init.*

without changing its place as a whole.[1] It is the measure for all other movement. It alone is entirely uniform, whereas in rectilinear[2] movement rapidity increases in proportion to the distance from the starting-point.[3] How this eternal rotation is brought about by the operation of the *primum movens*[4] we have already shown.

Important though movement in space is, as the most primitive kind of change on which all others are dependent, Aristotle cannot agree with the mechanical theory of physics in merging all forms of change in this one, and in assuming only the combination and separation, while rejecting the transmutation, of materials. Three questions arise upon this point. Is there a qualitative distinction between sorts of matter? Is there a qualitative alteration of materials? Is there such a combination of materials as to cause the change of their

[1] *Phys.* viii. 9, 265, b, 1; cf. p. 398, 4.

[2] Those, namely, which Aristotle treats as the natural motions of elementary bodies: in other words, the downward motion of heavy, and the upward motion of light bodies. With forcible movements the opposite is the case.

[3] *Phys.* viii. 9, 265, b, 8 sqq.

[4] The seventh book of the *Physics* is passed over in the above account, because it was not originally a part of the work (see p. 81, n. 2, *supra*). Its contents are as follows. After it has been explained in c. 1 that every movement must have its source in a *primum movens*, and in c. 2 (see p. 386, n. 3, and p. 423, n. 1, *ad fin.*) that the latter must move along with the motion, c. 3 goes on to show that ἀλλοίωσις concerns only the sensible qualities of things; c. 4 inquires in what case two movements are commensurable, and c. 5 finally proves that the same force moves half the mass in the same time twice as far, in half the time the same distance as the whole; likewise that the same mass is moved, by the same force, in the same time, the same distance, in half the time half the distance, while half the mass is moved by half the force the same distance; on the other hand, it does not follow that twice the mass is moved by the same force half as far as half the mass, or the same mass by half the force half as far as by the whole force; for the force may not perhaps be able to move it at all. The same is true of the other kinds of change.

qualities? The Atomists answered all three of these questions, Anaxagoras and Empedocles at least the second and the third, in the negative. Aristotle feels himself obliged to answer all affirmatively, combating the mechanical theory of his predecessors, and seeking the solution of their difficulties in the peculiar tenets of his own system. That he wholly succeeded in this attempt the natural science of our day will certainly refuse to admit, and will even be frequently inclined, with Bacon,[1] to take the part of Democritus against him. Yet this is just a case in which we have to guard against a too hasty criticism of a man who occupies one of the first places among the scientific investigators as well as the philosophers of antiquity. In order to form an impartial judgment of Aristotle in his contest with the mechanical theory of physics, and to appreciate his own views, we must never forget that we have not here to do with the atomistic philosophy of our days, but with that of Democritus, which differed from it *toto cœlo*. Aristotle, like his opponents, possessed nothing but the scantiest rudiments of the methods and processes of observation which we have to so boundless an extent at our command. He had to define the elementary physical conceptions of an age whose observations did not extend beyond the reach of the naked eye, and whose experiments were confined to a few simple and for the most part very unreliable empirical processes. Of all[2] our mathematical, optical, and

[1] Cf. KUNO FISCHER, *Franz Bacon*, 262 sqq. (Eng. tr.).

[2] Cf. also BRANDIS, ii. b, 1213 sq., 1220 sq., and MEYER's references (*Arist. Thierkunde*, 419 sq.) to Aristotle's method in testing heat.

physical instruments, he possessed only the rule and compasses, together with the most imperfect substitutes for some few others. Chemical analysis, correct measurements and weights, and a thorough application of mathematics to physics, were unknown. The attractive force of matter, the law of gravitation, electrical phenomena, the conditions of chemical combination, pressure of air and its effects, the nature of light, heat, combustion, &c.—in short, all the facts on which the physical theories of modern science are based, were wholly, or almost wholly, undiscovered. It would have been more than a miracle, if under such circumstances Aristotle had developed views in natural philosophy of which we could have availed ourselves without alteration at the present time. It is the business of a history to show how he explained phenomena consistently with the position of knowledge in his own day.[1]

None of the ancient systems presents so pure a form of mechanical physics as the atomic, to which the theory of the elements adopted by Plato from Philolaus is closely allied. Both deny qualitative variety in matter, and consider differences of shape and magnitude as the only original and real distinction. Aristotle opposes this view, not merely because it maintains the existence of infinitely small bodies or superficies, but also because it denies specific difference in matter. In both respects, according to his judgment, the weaknesses of the Platonic theory are most striking.[2] It contradicts mathematics, because it regards bodies as composed of superficies, which brings us logically to the assumption

[1] Cf. *supra*, p. 262 sq. [2] Cf. ZELLER, *Platon. Stud.* . 270 sq.

of indivisible lines,[1] nay, further, to the resolution of magnitudes into points.[2] Again it destroys the divisibility of bodies.[3] Moreover, the figures of the elements assumed by Plato do not fill the space within the world, and yet he allows no vacuum.[4] Lastly, it is impossible to form any coherent bodies out of them.[5] Nor are the difficulties which beset this theory from the point of view of physics less important. For how can bodies which have weight consist of surfaces which have none?[6] And how, according to this hypothesis, could the specific gravity or levity of the single elements be produced? Fire would have to become heavier and ascend more slowly in proportion to its bulk; much air would be heavier than a little water.[7] Again, while experience shows that all the elements are mutually transmutable, Plato only admits this with respect to the three just mentioned;[8] even in their case difficulties arise from the circumstance that superfluous

[1] Plato, indeed, and Xenocrates actually adopted this assumption; cf. ZELL. *Ph. d. Gr.* pt. i. pp. 807, 2 *ad fin.* 868.

[2] *De Cœlo*, iii. 1, 299, a, 6, 300, a, 7, c. 7, 306, a, 23. Cf. *Gen. et Corr.* ii. 1, 329, a, 21: since the πρώτη ὕλη of the *Timæus* is not a superficies, elementary matter cannot be resolved into superficies.

[3] *De Cœlo*, iii. 7, 305, b, 31, 306, a, 26: primary atoms of the elements cannot be divisible (nor are they according to Plato and Democritus) seeing that when fire or water is divided, each part is again fire or water—whereas the parts of a ball or pyramid are not balls or pyramids.

[4] *Ibid.* c. 8 *init.*; cf. ZELL. *Ph. d. Gr.* pt. i. 679, 3.

[5] *Ibid.* 306, b, 22 sqq.

[6] *De Cœlo*, iii. 1, 299, a, 25 sqq. b, 31 sqq. (where, however, we must read τὰ σώματα τῶν ἐπιπέδων, the gen. ἐπιπέδων being governed by πλήθει); cf. the corresponding objection to the Pythagoreans, p. 311, n. 5, 6 *supra*.

[7] *De Cœlo*, iv. 2, 308, b, 3 sqq. c. 5, 312, b, 20 sqq. It has already been shown how we are to interpret these objections in the mouth of Aristotle.

[8] *De Cœlo*, iii. 7, 306, a, 1 sqq. ZELL. *Ph. d. Gr.* pt. i. 676, 1, 2.

triangles are left over,[1] and that it is as easy to think of a superimposition of surfaces as of the composition assumed by Plato.[2] Furthermore, the theory of unchangeable type forms of the elements contradicts the fact that the shape of simple bodies—water and earth, for instance—is determined by the surrounding space.[3] In the last place, how are we to comprehend the qualities and movements of the elements by these hypotheses of Plato? Democritus supposed that fire was formed of globes, on account of its mobility and disruptive force; Plato thought it was made of pyramids, but that the earth was made of cubes, on account of its comparative immobility. Yet both of these elements are hard to move in their own locality, and easy to move in a strange one, since they strive to escape from the latter and not from the former.[4] Aristotle is therefore forced to regard Plato's theory of the elements as in every respect mistaken.[5]

The Atomic theory of Democritus and Leucippus is treated by him with more respect;[6] but he holds that

[1] *Ibid.* l. 20; cf. Plato, *Tim.* 56 D sq.

[2] *De Cœlo*, iii. 1, 299, b, 23.

[3] *Ibid.* c. 8, 306, b, 9.

[4] *Ibid.* 306, b, 29 sqq., where it is further objected that balls and pyramids are easily moved only in a circle, whereas fire has an upward movement. Again, if it is its corners that give to fire its heat-producing power, all elementary bodies must likewise produce heat as well as everything that has mathematical shape, for they all have corners. Fire changes things which it seizes into fire; a pyramid or a ball does not change that with which it comes into contact into balls or pyramids. Fire separates only dissimilars, whereas it unites similars. Further, if heat be united to a particular shape, so also must cold.

[5] PROCLUS at a later date defended it in a separate treatise against his attacks; SIMPL., *Schol. in Ar.* 515, a, 4.

[6] Cf. the discussion in *Gen. et Corr.* i. 2, 315, b, 30 sqq., the chief sentences of which are cited in ZELL. *Ph. d. Gr.* pt. i. 771, 4; also, on the Platonic theory, cf. *De Cœlo*, iii. 7, 306, a, 5 sqq.

it also is far from having proved that everything may be deduced from a primitive matter of absolutely homogeneous quality. In the first place, it is open to all the objections which beset the hypothesis of indivisible bodies.[1] Next, as in the case of Plato, it is clear that the materials could not adjust their shape to the space in which they find themselves, if we attribute a distinct elementary figure to them.[2] In the next place, we already [3] know the reasons why Aristotle is not inclined to admit an infinite variety of difference of shape among the atoms; and if the elementary atoms are to be distinguished only by their size, one element could not be developed from another.[4] If all the atoms are homogeneous, one does not see how they are separate, and why they do not join when brought into contact with one another. If they are composed of heterogeneous materials, we should have to seek the cause of phenomena in this circumstance, and not in the difference of shape, and then they would influence one another while in con-

[1] See, besides p. 306, the statements quoted p. 430, n. 2, all of which are more or less directly aimed at the atomists. Here also, we must continually remind ourselves of the state of science at the time, and of the peculiar character of the theory which Aristotle attacked. When, for instance, he shows that atoms could not cohere in a solid body, he is not speaking of the atoms of modern physics, which attract and repel one another, are held in equilibrium, &c., in many different ways, but of the atoms of Democritus, which act upon one another only mechanically by pressure or collision. It is certainly hard to see how a cohesive body could be constituted of such atoms. The means which Democritus adopted for securing this end by attributing corners and hooks to atoms, by which they may hang on to one another (ZELL. *Ph. d. Gr.* i. 796, 2, 798, 4), could not but appear to Aristotle, as they appeared (according to CIC. *Acad.* ii. 38, 121) to his follower Strato, fantastic and absurd.

[2] See p. 445, n. 3, *supra*.

[3] See p. 331 sq.

[4] *De Cælo*, iii. 4, 303, a 24 sqq. Cf. p. 306, n. 6.

tact, which is what the Atomists deny.[1] In the same way a reciprocal influence would exist between them if certain qualities—like warmth, for instance—were coupled with a certain shape; it is, however, equally impossible to imagine the atoms without qualities and to suppose them endowed with definite properties.[2] Again, there is no reason why there should be only small and invisible atoms and not also large ones.[3] Lastly, if the atoms are moved by another power, they experience an influence, and their apathy is destroyed: if they move themselves, the motive force is either inside them and different from what is moved—in which case they are not indivisible—or opposite properties are united in one and the same object.[4]

Again, Aristotle believed that Democritus was quite as unable as Plato to explain the physical qualities of things. The one makes fire spherical, the other pyramidal in form, but both are equally wrong.[5] Aristotle, however, derives his most conclusive argument against the homogeneity of matter from the very phenomenon by which modern science is accustomed to support it—the phenomenon of gravity. Democritus, like Aristotle, was ignorant that all bodies mutually attract each other, that within the terrestrial atmosphere they all gravitate to the centre of the earth, that the inequality in the rate of their descent is caused by

[1] *Gen. et Corr.* i. 8, 326, a, 29 sqq., to which, however, it might be replied that they refuse to unite because they are not liquid but solid bodies.

[2] *Ibid.* 326, a, 1–24.

[3] *Ibid.* at line 24.

[4] *Ibid.* 326, b, 2.

[5] In the passage quoted p. 445, n. 4, *supra*, Aristotle attacks both views alike and on the same grounds. Cf. also *Gen. et Corr.* i. 8, 326, a, 3.

the resistance of the air, and that the pressure of the atmosphere occasions the ascent of fire, vapour, &c. Democritus believed that all the atoms fall downwards in the void, but that the greater fall quicker than the less, deducing from this hypothesis the concussion of the atoms and the pressure by which the lesser are driven upwards. For the same reason, he held that the weight of composite bodies, supposing their circumference equal, corresponds to their magnitude after subtraction of the empty interstices.[1] Aristotle demonstrates[2] that this hypothesis is false: there is no above or beneath in infinite space, and consequently no natural tendency downwards; all bodies must fall with equal rapidity in the void,[3] nor can the void within bodies make them lighter than they really are. But being equally unacquainted with the actual phenomena which have to be explained, Aristotle repudiates the only true point in the system of Democritus, in order to avoid the consequences which he saw to be implied in the Atomic hypothesis, but the truth of which Democritus was as far from recognising as he was. On the strength of what he assumed to be facts, he opposes a theory which, originally speculative, could only be supported by a verification of the facts it had assumed, such as was wholly beyond the reach of ancient science. It is true, as he says, that in a vacuum everything must sink with equal rapidity; but this

[1] Cf. ZELL. *Ph. d. Gr.* i. 779 sq., 791 sq.

[2] *Phys.* iv. 8, 214, b, 28 sqq. *De Cœlo*, iv. 2, 308, a 34–309, a, 18; see p. 428, n. 5, *supra*.

[3] EPICURUS, indeed, had recognised this, not, however, as a real advance upon the atomic theory, but only as a means of making his own arbitrary assumption of deviations in the atoms comprehensible. See p. 307, n. 4, *supra*.

appears to him so inconceivable that he considers it sufficient ground for rejecting the hypothesis of empty space.[1] He goes on to say that if all bodies be composed of the same matter, they must all be heavy, and there would be nothing that was in itself light and by virtue of its own nature disposed to rise, but only some things that remain behind in the downward movement or are driven upwards by something else. Although it may be that of two bodies of equal size, the denser might be the heavier, nevertheless a great mass of air or fire would necessarily be heavier than a small quantity of earth or water. This, however, he thinks impossible,[2] and he says it is manifest when we consider that certain bodies always tend upwards, rising quicker in proportion to the increase of bulk—a phenomenon which seems to Aristotle quite inexplicable on the hypothesis of absolute homogeneity in matter. If gravity be determined by bulk, then a greater mass of rarer material would be heavier than a small one of denser, and accordingly would move downwards. If, on the contrary, it is said that the more vacuum a body contains the lighter

[1] Cf. *Phys.* iv. 8, 216, a, 13: *ὁρῶμεν γὰρ τὰ μείζω ῥοπὴν ἔχοντα ἢ βάρους ἢ κουφότητος, ἐὰν τἆλλα ὁμοίως ἔχῃ τοῖς σχήμασι, θᾶττον φερόμενα τὸ ἴσον χωρίον, καὶ κατὰ λόγον ὃν ἔχουσι τὰ μεγέθη πρὸς ἄλληλα. ὥστε καὶ διὰ τοῦ κενοῦ. ἀλλ' ἀδύνατον. διὰ τίνα γὰρ αἰτίαν οἰσθήσεται θᾶττον; ἐν μὲν γὰρ τοῖς πλήρεσιν ἐξ ἀνάγκης· θᾶττον γὰρ διαιρεῖ τῇ ἰσχύϊ τὸ μεῖζον . . . ἰσοταχῆ ἄρα πάντ' ἔσται* [in a vacuum]. *ἀλλ' ἀδύνατον.*

[2] *De Cœlo*, iv. 2, 310, a, 7: *τῷ* [as PRANTL rightly reads, instead of *τὸ*] *δὲ μίαν ποιεῖν φύσιν τῶν τῷ μεγέθει διαφερόντων ἀναγκαῖον ταὐτόν συμβαίνειν τοῖς μίαν ποιοῦσιν ὕλην, καὶ μήθ' ἁπλῶς εἶναι μηθὲν κοῦφον μήτε φερόμενον ἄνω, ἀλλ' ἢ ὑστερίζον ἢ ἐκθλιβόμενον, καὶ πολλὰ μικρὰ* [small atoms] *ὀλίγων μεγάλων βαρύτερα εἶναι. εἰ δὲ τοῦτο ἔσται, συμβήσεται πολὺν ἀέρα καὶ πολὺ πῦρ ὕδατος εἶναι βαρύτερα καὶ γῆς ὀλίγης. τοῦτο δ' ἐστίν ἀδύνατον.* Cf. previous n. *Ibid.* c. 5, 312, b, 20 sqq. (where, however, in l. 32 we must read *ἐὰν δὲ δύο, τὰ μεταξὺ πῶς ἔσται ποιοῦντα,* &c., as Prantl does in his translation, though not in his text).

it is, it may be answered that a great mass of denser and heavier substance includes more vacuum than a small one of the rarer sort. Finally, if the weight of every body corresponded to the proportion between its bulk and the empty interstices, ever so great a lump of gold or lead might sink no faster, and ever so great a bulk of fire rise no faster, than the smallest quantity of the same stuff. He concludes that we are driven to assume the existence of certain bodies heavy or light in themselves, which move respectively towards the centre or the circumference of the world;[1] and this is possible only when we conceive of them as distinguished from each other by the qualities of the matter composing them and not merely by the figure or magnitude of the elementary ingredients.[2]

Not only are the materials of the world different in quality, but they are also subject to qualitative transformation. Unless we admit this, we must explain the apparent transmutation of matter either (with Empedocles, Anaxagoras and the Atomists) by a simple extrusion of existing materials, or (with Plato) by a change in the figures of the elements.[3] We have already seen[4] how far Aristotle is from agreeing with the latter solution as maintained by Plato. On the other hand, were we to imagine that one and the same corporeal substance, like wax, assumed first one and then another elementary form, and that this metamorphosis was in

[1] Aristotle here follows Plato's view; see ZELL. *Ph. d. Gr.* i. 678 sq. Strato, on the other hand, returned to that of Democritus; see *infra*, Ch. XX.

[2] *De Cœlo*, 308, a, 21 sqq. 309, b, 27 sqq. c. 5, 312, b, 20 sqq. Cf. the section concerning the Elements, *infra*.

[3] Cf. *De Cœlo*, iii. 7.

[4] P. 444 sqq.

fact the transmutation of materials, the indivisibility of these elementary substances would follow,[1] and this he finds to be at direct variance with the nature of corporeity.[2] As to the theory of Empedocles and the Atomists, it is clear that, according to them, those substances into which others seem to be transformed existed previously in a state of interminglement with the latter, and are merely extruded from them. Aristotle thinks that this conception is, in the first place, at variance with the testimony of our senses.[3] Experience shows us a metamorphosis of materials in which the elementary properties of substances alter. One substance passes into another, or a third is formed of several. When water freezes or ice melts, the phenomenon is not, he says, occasioned by a mere alteration in the position and order of the parts, nor has a mere separation or combination of materials taken place, but, while the substance remains the same, certain of its qualities have changed.[4] Again, when water is made from air, a body comes into existence heavier than air, yet not, he thinks, as a consequence of the separation and compression of certain portions of the air. Conversely, when air is produced

[1] *De Cælo*, iii. 7, 305, b, 28 sqq., 306, a, 30. The meaning is that we may suppose the elements formed of atoms of a definite shape—earth of cubical, fire of quadrilateral, atoms—without adopting Plato's view of the constitution of these bodies, and that the conversion of one element into another may be explained, not as its resolution into its primal surfaces and the combination of these into a new form, but as a transformation of the material that underlies all the elements alike (as was actually done by Philolaus, cf. ZELL. *Ph. d. Gr.* i. 376 sq.). By thus conceiving of the atoms of the elements as divisible, however, we should involve ourselves in the difficulty already mentioned, p. 444, n. 3.

[2] See p. 430, n. 2, *supra*.

[3] *Gen. et Corr.* i. 1, 314, b, 10 sqq. *De Cælo*, iii. 7, 305, b, 1. *Metaph.* i. 8, 989, a, 22 sqq.

[4] *Gen. et Corr.* i. 9, 327, a, 14 sqq.

by evaporation from water, the former occupies so large a space in comparison with the latter that it even bursts the vessel. How is this to be explained on the hypothesis that it had previously existed in the water without change or difference ?[1] If a body grows or dwindles, it is not merely that new parts are added to it, but all its parts increase or diminish in size—and this involves a general change in the material.[2] When bones and flesh are formed from food, they are not taken ready made from what we eat, like bricks from a wall or water from a cask, but the food passes into a new material.[3] Moreover, it is clear that the elements themselves come into existence and perish : fire is kindled and goes out; water is precipitated from the air and passes into steam again. How are we to conceive of such formation and dissolution? There must be definite points at which they begin and end, as in the case of all Becoming, else we should be driven to suppose an infinite progression in two directions. Yet these terminal points cannot consist of indivisible bodies—whether absolutely indivisible (or atoms) as we have already seen,[4] or such

[1] *De Cœlo*, as above, 305, b, 5 sqq. Aristotle's view of gravity precludes the admission that the greater weight of water as compared with steam is due merely to its greater density. The atomists of that time could not possibly explain the expansion of fluids into steam as the result of increased repulsion in the atoms; at least the atoms of Democritus are certainly incapable of internal change. Empedocles and Anaxagoras (with whom Aristotle, *ibid.* l. 16 sqq., first deals) were obliged to explain steam as a kind of air which emanates from water; nor could atomists generally regard it as other than a complex of atoms emanating from water in which they had previously been imprisoned. As against such theories Aristotle's objections are valid.

[2] *Gen. et Corr.* i. 9, 327, a, 22.

[3] *Ibid.* ii. 7, 334, a, 18, 26; cf. *De Cœlo*, iii. 7, 305, b, 1. Cf. p. 457 sq.

[4] In the passage from *De Cœlo*, iii. 4, cited at pp. 306, n. 6, and 446, n. 4.

as are divisible by nature but are never actually divided; for why should the smaller resist division, when larger bodies of similar substance do not do so? No more can the elements be produced from incorporeal substance,[1] or from a body different from themselves; for if the latter were not one of the elements, it could have no gravity or natural locality, and hence would be a mathematical and not a physical body, and would not exist in space. Hence we are driven to suppose that the elements are developed from one another.[2] But this process can only be conceived as one of transformation. For if there were not a transformation of the elements, but only a putting forth of something which they already contained complete within themselves, one substance could not be *entirely* dissolved into another, but an insoluble remnant would be left: and so any complete transmutation of substances, such as is given in experience, would be impossible.[3] Coarse and fine materials could never be completely converted into each other.[4] Lastly, how are we to imagine the reciprocal influence of substances on one another, unless they are capable of qualitative change? Empedocles and Democritus made bodies enter each other by means of 'pores.' But not only can this hypothesis be dis-

[1] As is proved at superfluous length, and with some obscurity, in the *De Cœlo*, iii. 7, 305, a, 16 sqq.

[2] *De Cœlo*, iii. 6.

[3] This objection is first brought against Anaxagoras in the *Phys.* i. 4, 187, b, 22 sqq.: in *De Cœlo*, iii. 7, 305, b, 20 sqq. it is used against all who explain material change as an extrusion—in the latter case with justice, since if steam, for example, consists of a different material or different atoms from water, steam might be extruded from water, but water could not be wholly resolved into steam.

[4] *De Cœlo*, iii. 4, 303, a 24, where the words ὑπολείψει γὰρ ἀεὶ, &c., must mean 'since the larger atoms would fail to obtain release,' so that in water, for example, a residuum would be left which could not be turned into air.

pensed with, since bodies only require to be divisible, and need not be actually divided in order to experience reciprocal influences; but it really serves no purpose, for, if two bodies cannot affect each other by contact, those parts of them which interpenetrate by means of pores will not do so either.[1] Therefore while the mechanical theory of nature confined itself to a movement of the elementary ingredients in space, Aristotle maintained their qualitative alteration. Where the former had explained apparent metamorphosis as a mere process of extension, Aristotle assumed the operation of real changes under certain conditions. His predecessors restricted the reciprocal operation of bodies to pressure and impulse: he extended it to the internal nature of bodies, whereby they transform their primitive qualities.

It is precisely this process which he understands by 'action and passion' in their stricter sense.[2] The conditions of such transformation, as of all movement, are contained in the correlation of potentiality and actuality. When two things meet, of which one is actually what the other is potentially, then, so far as this is the case, the latter is patient, the former agent:[3] and a change is produced in the one, which proceeds from

[1] *Gen. et Corr.* i. 8, 326, b, 6–28, c. 9, 327, a, 7 sqq.

[2] *Gen. et Corr.* i. 6, 323, a, 12: if the *movens* is likewise partly *motum*, partly *immobile*, this must be true also of the agent: καὶ γὰρ τὸ κινοῦν ποιεῖν τί φασι καὶ τὸ ποιοῦν κινεῖν. οὐ μὴν ἀλλὰ διαφέρει γε καὶ δεῖ διορίζειν· οὐ γὰρ οἷόν τε πᾶν τὸ κινοῦν ποιεῖν, εἴπερ τὸ ποιοῦν ἀντιθήσομεν τῷ πάσχοντι. τοῦτο δ' οἷς ἡ κίνησις πάθος. πάθος δὲ καθ' ὅσον ἀλλοιοῦται μόνον, οἷον τὸ λευκὸν καὶ τὸ θερμόν· ἀλλὰ τὸ κινεῖν ἐπὶ πλέον τοῦ ποιεῖν ἐστίν.

[3] *Ibid.* c. 9 *init.*: τίνα δὲ τρόπον ὑπάρχει τοῖς οὖσι γεννᾷν καὶ ποιεῖν καὶ πάσχειν, λέγωμεν λαβόντες ἀρχὴν τὴν πολλάκις εἰρημένην. εἰ γάρ ἐστι τὸ μὲν δυνάμει τὸ δ' ἐντελεχείᾳ τοιοῦτον, πέφυκεν οὐ τῇ μὲν τῇ δ' οὐ πάσχειν, ἀλλὰ πάντῃ καθ' ὅσον ἐστὶ τοιοῦτον, ἧττον δὲ καὶ μᾶλλον ᾗ τοιοῦτον μᾶλλόν ἐστι καὶ ἧττον.

the other.[1] Action and passion, like all movement, presuppose on the one hand the distinction of a *movens* and a *motum*, on the other their direct or indirect contact. Where one or other of these conditions fails, no passion and no alteration is possible; where both are present, it is inevitable.[2] Again, this consequence depends upon the agent being partly similar and partly opposed to the patient; since of things which belong to wholly different genera, as a figure and a colour, for example, neither can produce any change in the other; and the same is true of such things as are completely similar, since change is always a passage from one condition into an opposite, and that which does not stand in any opposition to another thing cannot produce in it an opposite condition. Hence the agent and the patient must be generically similar, but specifically different; and so the old moot point as to whether likes or unlikes influence each other is decided by the law that neither the one nor the other do so absolutely, but both in certain relations.[3] The agent and patient are opposed within the limits of the same genus;[4] and the change consists in the removal of this opposition, in the agent's making the patient like itself.[5] Hence

[1] It has been already shown, p. 386, n. 1, that all motion has its seat in the *motum*, not in the *movens*.

[2] *Ibid.* 327, a, 1, c. 8, 326, b, 1. *Longit. Vit.* 3, 465, b, 15. Cf. p. 378 sq. *supra*.

[3] *Gen. et Corr.* i. 7, 323, b, 15–324, a, 14, with which cf. the quotations on p. 340 sqq.

[4] Like all ἐναντία. See p. 224, n. 3, *supra*.

[5] *Gen. et Corr. ibid.* 324, a, 9: διὸ καὶ εὔλογον ἤδη τό τε πῦρ θερμαίνειν καὶ τὸ ψυχρὸν ψύχειν, καὶ ὅλως τὸ ποιητικὸν ὁμοιοῦν ἑαυτῷ τὸ πάσχον· τό τε γὰρ ποιοῦν καὶ τὸ πάσχον ἐναντία ἐστὶ, καὶ ἡ γένεσις εἰς τοὐναντίον. ὥστ' ἀνάγκη τὸ πάσχον εἰς τὸ ποιοῦν μεταβάλλειν· οὕτω γὰρ ἔσται εἰς τοὐναντίον ἡ γένεσις.

the patient is in the position of the 'matter,' to which a determinate 'form' is communicated by the agent.[1] In so far as it has not yet received this form or has another form, it is opposed to the agent; inasmuch as it must be capable of receiving it, it is similar in kind. If the agent is also a patient, so that the two mutually act upon each other, both must be of the same material, and in this respect belong to the same genus.[2] But this condition does not universally apply to agents: for as the *primum movens* is unmoved, so the first active power is without passivity, and therefore without matter; whereas, on the contrary, the lowest force that acts immediately upon another is material, and its operation is conditioned by a *πάθος* on its own part.[3] The reason why all parts of the patient are affected by this active influence and by the alteration it occasions, is to be found in the nature of corporeity. Body, as potential, is subject in its whole extent to the transition to actuality, *i e.* to change, and being divisible at all points, nowhere offers an absolute resistance to the active force.[4]

The question about the mixture of materials must be judged from the same points of view. A mixture[5] is a combination of two or more materials,[6] in which

[1] A relation obviously identical with that which he expresses in the passage quoted p. 454, n. 3, under the form of potentiality and actuality.

[2] *Ibid.* 324, b, 6: *τὴν μὲν γὰρ ὕλην λέγομεν ὁμοίως ὡς εἰπεῖν τὴν αὐτὴν εἶναι τῶν ἀντικειμένων ὁποτερουοῦν, ὥσπερ γένος ὄν.* The *γένος* stands to the *εἶδος* generally in the relation of matter; see p. 219, n. 2, *supra*.

[3] For the above, see *Gen. et Corr. ibid.* from 324, a, 15 to the end of the chapter; and cf. c. 10, 328, a, 17.

[4] *Gen. et Corr.* i. 9 *init.* (see p. 454, n. 3, *supra*). *Ibid.* 327, a, 6 sqq.

[5] According to *Gen. et Corr.* i. 10.

[6] Aristotle shows, *ibid.* 327, b,

neither the one is merged in the other,[1] nor both exist together unchanged, but a third is formed which is itself ὁμοιομερές.[2] In other words, it consists neither in the absorption of one sort of matter into another, nor in a merely mechanical junction or interminglement of both,[3] but in a chemical combination. When two materials are mixed, neither of them remains the same, preserving its original qualities. They are not merely blended in invisibly minute particles,[4] but both have wholly passed into a new material, wherein they remain only potentially, inasmuch as they can be again extracted from it.[5] Such a relation, however, only

13 sqq. 328, a, 19 sqq., that only the union of substances (χωριστὰ), not that of qualities or of the form with the matter or of the immaterial efficient cause with its passive object, can be called a mixture (μῖξις). To us this seems superfluous; but according to *Metaph.* i. 9, 991, a, 14 (cf. ZELL. *Ph. d. Gr.* i. 890, n. 4, and *ibid.* i. 881 sqq.) he had some occasion to make this reservation. That the substances, moreover, which are mixed can only be of a material nature is self-evident: for the incorporeal is ἀπαθές.

[1] As happens in the case of burning (*Gen. et Corr.* i. 9, 327, b, 10), where it is not a mixture that takes place, but the production of fire and the destruction of wood, or, in other words, the change of wood into fire. The same is true of nutrition, and generally of all cases in which one material is transformed into another (*ibid.* l. 13, 328, a, 23 sqq.). This is not a case of μῖξις but ἀλλοίωσις.

[2] *Ibid.* 328, a, 10: φαμὲν δ' εἴπερ δεῖ μεμῖχθαί τι, τὸ μιχθὲν ὁμοιομερὲς εἶναι [or as it is previously expressed: ἕξει τὸν αὐτὸν λόγον τῷ ὅλῳ τὸ μόριον] καὶ ὥσπερ τοῦ ὕδατος τὸ μέρος ὕδωρ, οὕτω καὶ τοῦ κραθέντος. On the ὁμοιομερὲς see the end of Ch. IX. *infra*, and cf. ZELL. *Ph. d. Gr.* i. 879, n. 2.

[3] Σύνθεσις, as distinguished (*ibid.* 328, a, 5 sqq. cf. *Metaph.* xiv. 5, 1092, a, 24, 26) from μῖξις or κρᾶσις. In *Metaph.* vii. 2, 1042, b, 16 σύνθεσις is further distinguished as the class notion under which κρᾶσις comes.

[4] As Anaxagoras, the Atomists and, later, Epicurus supposed.

[5] *Ibid.* 327, b, 22: ἐπεὶ δ' ἐστὶ τὰ μὲν δυνάμει τὰ δ' ἐνεργείᾳ τῶν ὄντων, ἐνδέχεται τὰ μιχθέντα εἶναί πως καὶ μὴ εἶναι, ἐνεργείᾳ μὲν ἑτέρου ὄντος τοῦ γεγονότος ἐξ αὐτῶν, δυνάμει δ' ἔτι ἑκατέρου ἅπερ ἦσαν πρὶν μιχθῆναι καὶ οὐκ ἀπολωλότα . . . . σώζεται γὰρ ἡ δύναμις αὐτῶν, just because they can be again separated; and l. 31 sqq. In later usage com-

occurs when the materials brought together are mutually capaple of acting and being acted on;[1] and when, moreover, the forces of both stand in a certain equilibrium, so that one of them does not get merged in the other and its qualities absorbed like a drop of wine in a hundred gallons of water; and lastly when they are easily divisible, so as to act upon each other at as many points as possible, like fluids.[2] Where these conditions meet, materials affect each other in such a manner that both, while combining, change at the same moment. This combination, attended by the simultaneous transmutation of the materials combined, is mixture.[3]

Aristotle is not content with substituting the theory of qualitative differences and transformations in matter for that of the mechanical physicists. He goes further, and shows that he is far from being satisfied with that physical view of things which is confined to material causes and their laws. Material causes are only intermediate—merely the means and indispensable conditions of phenomena. Above them stand final causes;

plete mixture of this kind (*τὸ πάντη μεμῖχθαι*, *De Sensu*, c. 3, 440, b, 11), as distinguished from a mere compound of smallest parts was called *ἡ δι' ὅλου κρᾶσις*.

[1] This is the case when their material is of the same kind but their qualities are of an opposite character; *ibid.* 328, a, 19 sqq. 31; cf. p. 454, *supra*.

[2] *Ibid.* 328, a, 18 towards the end of the c., where the above is thus expressed: mixture takes place *ἐπείπερ ἐστὶν ἔνια τοιαῦτα οἷα παθητικά τε ὑπ' ἀλλήλων καὶ εὐόριστα καὶ εὐδιαίρετα* [according to what Aristotle says, *ibid.* 328, b, these two coincide with one another]. *ταῦτα γὰρ οὔτ' ἐφθάρθαι ἀνάγκη μεμιγμένα οὔτ' ἔτι ταὐτὰ ἁπλῶς εἶναι, οὔτε σύνθεσιν εἶναι τὴν μῖξιν αὐτῶν, οὔτε πρὸς τὴν αἴσθησιν* [the previously mentioned apparent mixture]· *ἀλλ' ἔστι μικτὸν μὲν ὃ ἂν εὐόριστον ὂν παθητικὸν ᾖ καὶ ποιητικὸν καὶ τοιούτῳ μικτόν.*

[3] *Ibid.* 328, b, 22: *ἡ δὲ μῖξις τῶν μικτῶν ἀλλοιωθέντων ἕνωσις.*

above material necessity, the design of the universe; above the physical explanations of nature, the teleological.

Our researches up to this point have already led to the conclusion that everything in nature has its End. If Nature is the inner cause of motion, every motion has its goal by which its measure and direction are determined.[1] If the essence of things consists in their form, the form is not to be distinguished from their End.[2] If everything which moves must of necessity be moved by something else, it follows that the ultimate cause of movement resides in that which moves the universe as its Final Cause,[3] and movement in general can only be conceived as the action of form upon matter, in which the former is the 'object of desire,' and so the goal towards which the latter strives.[4] Aristotle cannot conceive of regulated and orderly events except under the analogy of human action directed towards an end. Hence while combating the theory of an *anima mundi* in the form in which it had been held by Plato, he adopts himself a similar view.[5] He

[1] See p. 341, n. 2, *supra*.

[2] See p. 356 sqq., p. 418, and p. 462, n. 2.

[3] See p. 404, and p. 396, n. 3.

[4] See p. 383, and p. 379, n. 1.

[5] *De An.* i. 3, 406, b, 25 sqq.; *De Cœlo*, ii. 1, 284, a, 27 sqq.; *Metaph.* xii. 6, 1071, b, 37. Aristotle rejects this theory in the first place because he cannot regard the soul as in any sense a *motum* and therefore not even as ἑαυτὸ κινοῦν (see the beginning of Ch. X. *infra*). He further objects that Plato conceives of the soul of the world as something extended in space. But it would be impossible to suppose that its thought consists of circular motion, or of any motion at all. It would be inconsistent with its perfect happiness that it should be intermixed with the body of the world and, burdened with the latter, should have unintermittently to produce, like an Ixion with his wheel, a motion which had no affinity with its nature and which therefore involved exertion. Nor, indeed, is it shown how it produces it. Lastly, the soul cannot be ἀρχὴ as asserted in the *Phædrus*, if, according to the *Timæus*, it comes into existence only with the world.

refers not only the movement of the outermost sphere, which communicates itself to all others, but also that of the stars, like Plato, to the action of spirits, which are related to the spheres moved by them as the human soul is to the body.[1] He even treats the forces of nature in general, to a certain extent, from the same point of view: in the eternity of motion he recognises the immortal life of nature,[2] and he even ascribes a sort of animation to the elements.[3] Every vital activity is also, as we shall see,[4] an activity guided by a purpose, for everything in living beings is related to the soul as the incorporeal unity of the corporeal existence. Hence it follows that by regarding nature as a living whole,

[1] Cf. p. 373 sq. and see the section in the next chapter concerning the Spheres. Aristotle is so far justified from his own point of view in treating both the world as a whole, and its individual parts as animated with life, as he does also *De Cœlo*, ii. 12 followed by Eudemus (*Fr.* 76 b, SIMPL. *Phys.* 283 m.: cf. SIEBECK, *D. Lehre d Ar. v. d. Leben d. Universum*, in *Fichte's Ztschr f. Phil.* lx. 31). God is a part of the universe in the same sense in which reason is a part of the man; and of the same nature is the relation of the spheral spirits to their spheres. Each of these spirits, however, animates only the sphere which it moves and the *primum movens* only the πρῶτος οὐρανός. While the movement of the latter, indeed, extends to all the other spheres, yet in their case it is something communicated from without like the motion of the driver on a carriage; their own proper motion, on the other hand, is due, not to the *primum movens*, but to particular motors. Although the whole world is thus animated, yet Aristotle refuses to call it with Plato ζῷον, because its life springs from no single principle of motion.

[2] *Phys.* viii. 1 *init.*: Πότερον δὲ γέγονέ ποτε κίνησις οὐκ οὖσα πρότερον, καὶ φθείρεται πάλιν οὕτως ὥστε κινεῖσθαι μηδὲν, ἢ οὔτ' ἐγένετο οὔτε φθείρεται, ἀλλ' ἀεὶ ἦν καὶ ἀεὶ ἔσται, καὶ τοῦτ' ἀθάνατον καὶ ἄπαυστον ὑπάρχει τοῖς οὖσιν, οἷον ζωή τις οὖσα τοῖς φύσει συνεστῶσι πᾶσιν. In these words Aristotle seems to have in mind the passage from Heraclitus, quoted ZELL. *Ph. d. Gr.* i. 586, 2.

[3] *Gen. An.* iii. 11, 762, a, 18: γίνεται δ' ἐν γῇ καὶ ἐν ὑγρῷ τὰ ζῷα καὶ τὰ φυτὰ διὰ τὸ ἐν γῇ μὲν ὕδωρ ὑπάρχειν, ἐν δ' ὕδατι πνεῦμα, ἐν δὲ τούτῳ παντὶ θερμότητα ψυχικήν, ὥστε τρόπον τινὰ πάντα ψυχῆς εἶναι πλήρη.

[4] At the commencement of Chap. X. *infra*.

and deducing its movement from the incorporeal forms which govern all material change and shape, Aristotle is driven, as was Plato on similar grounds,[1] to adopt of necessity a teleological theory of nature.[2] God and nature, he says, do nothing without a purpose; nature always strives, as far as circumstances permit, to realise perfection; nothing is superfluous, profitless, or incomplete in her; of her productions we may say with truth, and far more truly than of those of art, that there is nothing accidental in them, but that everything has its own purpose;[3] it is, indeed, this very prominence of design in nature which constitutes the beauty of her creations and the charm with which even the least of them repay investigation.[4] The essence of Nature, as

[1] See ZELL. *Ph. d. Gr.* i. 642 sqq.

[2] With what follows, cf. RITTER'S exhaustive treatment of the whole subject, iii. 213 sqq. 265 sqq.

[3] *De Cœlo*, i. 4 *fin.*: ὁ θεὸς καὶ ἡ φύσις οὐδὲν μάτην ποιοῦσιν. ii. 8, 289, b, 26, 290, a, 31: οὐκ ἔστιν ἐν τοῖς φύσει τὸ ὡς ἔτυχεν . . . . οὐθὲν ὡς ἔτυχε ποιεῖ ἡ φύσις. c. 11, 291, b, 13: ἡ δὲ φύσις οὐθὲν ἀλόγως οὐδὲ μάτην ποιεῖ. c. 5, 288, a, 2: ἡ φύσις ἀεὶ ποιεῖ τῶν ἐνδεχομένων τὸ βέλτιστον. *Polit.* i. 8, 1256, b, 20: εἰ οὖν ἡ φύσις μηθὲν μήτε ἀτελὲς ποιεῖ μήτε μάτην. *Part. An.* i. 1, 639, b, 19: μᾶλλον δ' ἐστὶ τὸ οὗ ἕνεκα καὶ τὸ καλὸν ἐν τοῖς τῆς φύσεως ἔργοις ἢ ἐν τοῖς τῆς τέχνης. iv. 10, 687, a, 15 (cf. ii. 14): ἡ φύσις ἐκ τῶν ἐνδεχομένων ποιεῖ τὸ βέλτιστον, c. 12, 694, a, 15: οὐδὲν ἡ φύσις ποιεῖ περίεργον. *De An.* iii. 9, 432, b, 21: ἡ φύσις μήτε ποιεῖ μάτην μηθὲν μήτ' ἀπολείπει τι τῶν ἀναγκαίων πλὴν ἐν τοῖς πηρώμασι καὶ τοῖς ἀτελέσιν. *Gen. et Corr.* ii. 10, 336, b, 27: ἐν ἅπασιν ἀεὶ τοῦ βελτίονος ὀρέγεσθαί φαμεν τὴν φύσιν. *De Vita et M.* c. 4, 469, a, 28: τὴν φύσιν ὁρῶμεν ἐν πᾶσιν ἐκ τῶν δυνατῶν ποιοῦσαν τὸ κάλλιστον. *Gen. An.* ii. 6, 744, b, 36: οὐθὲν ποιεῖ περίεργον οὐδὲ μάτην ἡ φύσις. Likewise c. 4, 739, b, 19. *Ingr. An.* c. 2, 704, b, 15: ἡ φύσις οὐθὲν ποιεῖ μάτην ἀλλ' ἀεὶ ἐκ τῶν ἐνδεχομένων τῇ οὐσίᾳ περὶ ἕκαστον γένος ζῴου τὸ ἄριστον· διόπερ εἰ βέλτιον ὡδί, οὕτως καὶ ἔχει κατὰ φύσιν. Even in the most insignificant products of nature we may perceive the effort after perfection; cf. foll. n. and *Eth. N.* x. 2, 1173, a, 4: ἴσως δὲ καὶ ἐν τοῖς φαύλοις ἐστί τι φυσικὸν ἀγαθὸν κρεῖττον ἢ καθ' αὑτά, ὃ ἐφίεται τοῦ οἰκείου ἀγαθοῦ. vii. 14, 1153, b, 38: πάντα γὰρ φύσει ἔχει τι θεῖον.

[4] *Part. An.* i. 5, 645, a, 15:

13/32

he shows, is Form, but the form of everything is determined by the function for which it is designed.[1] All Becoming has its goal, and the terminal point of all motion is also its end or object.[2] This pursuit of fixed designs in nature is demonstrated to our experience by the order and coherence of the universe and the regularity with which certain effects are produced by certain means. It is impossible to ascribe to chance what happens always or even usually.[3] He lays especial stress upon the motions of the heavenly bodies, the birth of living creatures from seed, the instinct of animals, the evidences of design in the structure of animals and plants, and also upon human action, inas-

*διὸ δεῖ μὴ δυσχεραίνειν παιδικῶς τὴν περὶ τῶν ἀτιμωτέρων ζῴων ἐπίσκεψιν. ἐν πᾶσι γὰρ τοῖς φυσικοῖς ἔνεστί τι θαυμαστόν.* As Heraclitus bade the strangers welcome to the bakery where they found him, saying that God was there also, *οὕτω καὶ πρὸς τὴν ζήτησιν περὶ ἑκάστου τῶν ζῴων προσιέναι δεῖ μὴ δυσωπούμενον ὡς ἐν ἅπασιν ὄντος τινὸς φυσικοῦ καὶ καλοῦ. τὸ γὰρ μὴ τυχόντως ἀλλ' ἕνεκά τινος ἐν τοῖς τῆς φύσεως ἔργοις ἐστὶ καὶ μάλιστα· οὗ δ' ἕνεκα συνέστηκεν ἢ γέγονε τέλους τὴν τοῦ καλοῦ χώραν εἴληφεν.* (Cf. c. 1, cited in previous n.)

[1] Cf. also *Meteor*. iv. 12, 390, a, 10: *ἅπαντα δ' ἐστὶν ὡρισμένα τῷ ἔργῳ· τὰ μὲν γὰρ δυνάμενα ποιεῖν τὸ αὑτῶν ἔργον ἀληθῶς ἐστιν ἕκαστα, οἷον ὁ ὀφθαλμὸς* [sc. *ἀληθῶς ὀφθαλμὸς ἐστιν*] *εἰ ὁρᾷ, τὸ δὲ μὴ δυνάμενον ὁμωνύμως, οἷον ὁ τεθνεὼς ἢ ὁ λίθινος.*

[2] *Phys*. ii. 2, 194, a, 28: *ἡ δὲ φύσις τέλος καὶ οὗ ἕνεκα· ὧν γὰρ συνεχοῦς τῆς κινήσεως οὔσης ἔστι τι τέλος τῆς κινήσεως, τοῦτο ἔσχατον καὶ τὸ οὗ ἕνεκα.* c. 8, 199, a, 8: *ἐν ὅσοις τέλος ἐστί τι, τούτου ἕνεκα πράττεται τὸ πρότερον καὶ τὸ ἐφεξῆς,* &c. *Ibid*. l. 30, see p. 356, *supra*. *Part. An*. i. 1, 641, b, 23: *πανταχοῦ δὲ λέγομεν τόδε τοῦδε ἕνεκα, ὅπου ἂν φαίνηται τέλος τι πρὸς ὃ ἡ κίνησις περαίνει μηδενὸς ἐμποδίζοντος, ὥστε εἶναι φανερὸν ὅτι ἔστι τι τοιοῦτον, ὃ δὴ καὶ καλοῦμεν φύσιν.* *Phys*. ii. 1, 193, b, 12: *ἡ φύσις ἡ λεγομένη ὡς γένεσις* [see *Metaph*. v. 4 *init.*] *ὁδός ἐστιν εἰς φύσιν . . . ἡ ἄρα μορφὴ φύσις.* *De An*. ii. 4, 415, b, 16: *ὥσπερ γὰρ ὁ νοῦς ἕνεκά του ποιεῖ, τὸν αὐτὸν τρόπον καὶ ἡ φύσις.*

[3] *Phys*. ii. 8, 198, b, 34, 199, b, 15, 23; *Part. An*. iii. 2, 663, b, 28; *Gen. An*. i. 19, 727, b, 29, cf. p. 362, n. 5; *De Cœlo*, ii. 8, 289, b, 26: *οὐκ ἔστιν ἐν τοῖς φύσει τὸ ὡς ἔτυχεν, οὐδὲ τὸ πανταχοῦ καὶ πᾶσιν ὑπάρχον τὸ ἀπὸ τύχης.*

much, that is to say, as all art is an imitation or completion of nature, and the design of the one therefore implies that of the other.[1] If we cannot deny the evidences of design throughout the world of mortal things, he argues that we must admit the same in a far greater measure with regard to the universe at large, where the order is more strict, and the regularity more unbroken. Whence, indeed, could the laws which govern the former have sprung except from the latter?[2] Consequently the discovery of final causes forms the first and most important problem of natural science. It must direct its attention, not to the individual, but to the whole which the individual subserves—not to the matter but to the form.[3] But if it is suggested that, in

[1] *Phys.* ii. 8, 198, b, 32–199, b, 26, cf. viii. 1, 252, a, 11: ἀλλὰ μὴν οὐδέν γε ἄτακτον τῶν φύσει καὶ κατὰ φύσιν· ἡ γὰρ φύσις αἰτία πᾶσι τάξεως. *Part. An.* i. 1, 641, b, 12–30; *De Cœlo*, ii. 8, 289, b, 25; *Gen. An.* iii. 10, 760, a, 31; *Metaph.* xii. 10, xiv. 3; see p. 391, n. 2, *supra*.

[2] *Part. An.* i. 1, 641, b, 12: ἡ φύσις ἕνεκά του ποιεῖ πάντα. φαίνεται γὰρ, ὥσπερ ἐν τοῖς τεχναστοῖς ἐστὶν ἡ τέχνη, οὕτως ἐν αὐτοῖς τοῖς πράγμασιν ἄλλη τις ἀρχὴ καὶ αἰτία τοιαύτη, ἣν ἔχομεν καθάπερ [as well as] τὸ θερμὸν καὶ ψυχρὸν ἐκ τοῦ παντός. διὸ μᾶλλον εἰκὸς τὸν οὐρανὸν γεγενῆσθαι ὑπὸ τοιαύτης αἰτίας, εἰ γέγονε, καὶ εἶναι διὰ τοιαύτην αἰτίαν μᾶλλον ἢ τὰ ζῷα τὰ θνητά· τὸ γοῦν τεταγμένον καὶ τὸ ὡρισμένον πολὺ μᾶλλον φαίνεται ἐν τοῖς οὐρανίοις ἢ περὶ ἡμᾶς, τὸ δ' ἄλλοτ' ἄλλως καὶ ὡς ἔτυχε περὶ τὰ θνητὰ μᾶλλον. οἱ δὲ τῶν μὲν ζῴων ἕκαστον φύσει φασὶν εἶναι καὶ γενέσθαι, τὸν δ' οὐρανὸν ἀπὸ τύχης καὶ τοῦ αὐτομάτου τοιοῦτον συστῆναι, ἐν ᾧ ἀπὸ τύχης καὶ ἀταξίας οὐδ' ὁτιοῦν φαίνεται. Cf. also ZELL. *Ph. d. Gr.* i. 650, 579, 1.

[3] *Phys.* ii. 9, 200, a, 32 (after the passage quoted p. 360, n. 1): καὶ ἄμφω μὲν τῷ φυσικῷ λεκτέαι αἱ αἰτίαι, μᾶλλον δὲ ἡ τίνος ἕνεκα· αἴτιον γὰρ τοῦτο τῆς ὕλης [inasmuch as Nature chooses her materials with a view to the thing that is to be produced] ἀλλ' οὐχ αὕτη τοῦ τέλους. *Gen. et Corr.* ii. 9, 335, b, 29: it is not sufficient to give the material causes of a thing. Matter is merely the *motum*, the *movens* in the province both of nature and art is something quite different; the κυριωτέρα αἰτία is the form. Materialistic physics, instead of giving us the real causes, can tell us only of implements of production: as if one in answer to the question 'Who saws the wood?' were to reply,

order to pursue definite ends, Nature must be capable of conscious deliberation, Aristotle considers this unreasonable Even Art, he remarks, does not reflect, but works in the artist unconsciously.[1] Moreover, it is just this which, as we already know, forms to Aristotle's mind the distinction between Art and Nature, that the productions of the former have their motive principle outside themselves, and those of the latter within.[2] We thus arrive for the first time at the important conception of immanent design, a point so essential to Aristotle's system that we might define Nature, according to his view, as the realm of internal activity toward a fixed end.

'The saw.' Cf. p. 360, n. 1, and the passages quoted p. 303, n. 3, and p. 307, n. 4, and Zell. *Ph. d. Gr.* pt. i. 788, 1, 3, 893, 2, on the neglect of final causes in ancient physics. *Part. An.* i. 1, 639, b, 14: *φαίνεται δὲ πρώτη* [sc. *αἰτία*] *ἣν λέγομεν ἑνεκά τινος· λόγος γὰρ οὗτος, ἀρχὴ δ' ὁ λόγος ὁμο'ως ἔν τε τοῖς κατὰ τέχνην καὶ ἐν τοῖς φύσει συνεστηκόσιν.* *Ibid.* c. 5, 645, a, 30: in the investigation of the animal organism the question is, not of the individual parts or the matter, but of the *ὅλη μορφὴ*, of the *σύνθεσις* and the *ὅλη οὐσία*.

[1] *Phys.* ii. 8, 199, b, 26: *ἄτοπον δὲ τὸ μὴ οἴεσθαι ἕνεκά του γίνεσθαι, ἐὰν μὴ ἴδωσι τὸ κινοῦν βουλευσάμενον* [= *ἐὰν μὴ βουλεύηται τὸ κινοῦν*, for the poirt is missed by Döring, who, in his *Kunstl. d. Arist.* 68, puts a false emphasis on *ἴδωσι*], *καίτοι καὶ ἡ τέχνη οὐ βουλεύεται· καὶ γὰρ εἰ ἐνῆν ἐν τῷ ξύλῳ ἡ ναυπηγική, ὁμοίως ἂν φύσει ἐποίει· ὥστ' εἰ ἐν τῇ τέχνῃ ἔνεστι τὸ ἕνεκά του, καὶ ἐν φύσει.* Aristotle has here in view the art that has become a fixed habit and second nature in the artist. Such art he conceives of, however, not as belonging to the artist, but as inherent in 'Art' itself, seeing that the creative principle resides, not in the artist, but in the artistic conception which operates in him, and which Aristotle therefore identifies with the *τέχνη* itself; cf. the passages quoted from *Metaph.* vii. 7, *Gen. An.* ii. 4, *Part. An.* i. 1, in n. 1, p. 356, and *Gen. et Corr.* i. 7, 324, a, 34: *ὅσα γὰρ μὴ ἔχει τὴν αὐτὴν ὕλην, ποιεῖ ἀπαθῆ ὄντα, οἷον ἡ ἰατρική· αὐτὴ γὰρ ποιοῦσα ὑγίειαν οὐδὲν πάσχει ὑπὸ τοῦ ὑγιαζομένου.*

[2] See p. 418, n. 3, *supra*. In this sense Nature, as the internal operative principle *in* living things, is also expressly opposed to the human understanding, which operates upon them *from without* (*θύραθεν νοῦς*); cf. *Gen. An.* ii. 6, 744, b, 21.

But this action in obedience to purpose cannot obtain a complete mastery in nature: for, along with the free operation of form, we have the necessary element of matter which cannot be entirely overcome by form. We have already shown (p. 359 sqq.) that Aristotle finds in matter the groundwork of chance and blind natural necessity. Both, in fact, ultimately coincide, since chance is precisely that which does not happen as the fulfiment of some design, but is produced by the way, in consequence of the operation of intervening causes which are indispensable to the attainment of a further end. This characteristic of natural existence renders it impossible to assign a purpose for everything in the world. Nature, indeed, works towards definite ends, but, in the realisation of her plans, she produces many things parenthetically, by the way, from mere necessity;[1] yet she still endeavours as far as possible to make use of such chance products, employing her superfluities for purposes of her own, and, like a good housewife, taking care that nothing be lost.[2] It follows that natural science, in like manner, cannot always proceed with the same rigour, but must take into account the disturbances introduced into the designs of nature by necessity and chance, admitting exceptions to rules, and feeling satisfied when her generalisations hold in the majority of instances.[3]

[1] See p. 361, n. 1, *supra*.

[2] *Gen. An.* ii. 6, 744, b, 16: ὥσπερ οἰκονόμος ἀγαθὸς, καὶ ἡ φύσις οὐθὲν ἀποβάλλειν εἴωθεν ἐξ ὧν ἔστι ποιῆσαί τι χρηστόν. He points especially to uses to which superfluous materials (περιττώματα, on which see *Gen. An.* i. 18, 724, b, 23 sqq.) are put in the formation and nutrition of animal organisms; *Gen. An.* ii. 4, 738, a, 37 sqq., iii. 2, 663, b, 31. Cf. also p. 361, n. 1, and *Part. An.* iv. 5, 679, a, 29, where he says of the juice of the cuttle-fish: ἡ δὲ φύσις ἅμα τῷ τοιούτῳ περιττώματι καταχρῆται πρὸς βοήθειαν καὶ σωτηρίαν αὐτῶν.

[3] *Part. An.* iii. 2, 663, b, 27,

It is from this resistance offered by matter to form that Aristotle derives all irregular natural phenomena (*τέρατα*), such as abortions and the like. He regards them as the stoppage of nature in the midst of an unfulfilled design, as a mutilation[1] and failure of the result which she originally intended.[2] Such phenomena arise from form not being completely master over matter.[3] Moreover, we may note that he even considers it a kind of abortion or failure of the ends of nature when children do not resemble their parents, and especially their father,[4] when a good man begets a bad son and *vice versa*,[5] when the nature of the body

cf. *Metaph.* ii. 3 *fin.* and p. 168, n. 1, 2, *supra*. Ritter's statement (see his p. 212) that the doctrine of Nature rests according to Aristotle rather on opinion than on science, seems to be due to a mistranslation of *Anal. Post.* i. 33, 89, a, 5, where ἡ φύσις ἡ τοιαύτη (i.e. τὸ ἐνδεχόμενον καὶ ἄλλως ἔχειν, as is clear from the context) is taken as = ἡ φύσις τοιαύτη—and Nature is so also (i.e. ἀβέβαιος).

[1] *Gen. An.* iv. 3, 759, b, 10 sqq. Aristotle is here speaking of abortions which want essential parts of the human body as well as those which have more than the proper number, and applies the above explanation to both: τέλος γὰρ τῶν μὲν κινήσεων (form-giving motion) λυομένων, τῆς δ' ὕλης οὐ κρατουμένης, μένει τὸ καθόλου μάλιστα· τοῦτο δ' ἐστὶ ζῷον . . . τὸ τέρας ἀναπηρία τίς ἐστιν. Cf. also 767, b, 13: τὸ δὲ τέρας οὐκ ἀναγκαῖον πρὸς τὴν ἕνεκά του καὶ τὴν τοῦ τέλους αἰτίαν, ἀλλὰ κατὰ συμβεβηκὸς ἀναγκαῖον.

[2] *Phys.* ii. 8, 199, b, 1: εἰ δὴ ἔστιν ἔνια κατὰ τέχνην ἐν οἷς τὸ ὀρθῶς ἕνεκά του, ἐν δὲ τοῖς ἁμαρτανομένοις ἕνεκα μέν τινος ἐπιχειρεῖται ἀλλ' ἀποτυγχάνεται, ὁμοίως ἂν ἔχοι καὶ ἐν τοῖς φυσικοῖς καὶ τὰ τέρατα ἁμαρτήματα ἐκείνου τοῦ ἕνεκά του.

[3] *Gen. An.* iv. 4, 770, b, 9: ἔστι γὰρ τὸ τέρας τῶν παρὰ φύσιν τι, παρὰ φύσιν δ' οὐ πᾶσαν ἀλλὰ τὴν ὡς ἐπὶ τὸ πολύ· περὶ γὰρ τὴν ἀεὶ καὶ τὴν ἐξ ἀνάγκης οὐθὲν γίνεται παρὰ φύσιν (a proposition which was afterwards applied by theologians to the miracles, and in this application has become famous, although it is not generally known that it comes from Aristotle). Even a τέρας, therefore, is in a certain sense κατὰ φύσιν, ὅταν μὴ κρατήσῃ τὴν κατὰ τὴν ὕλην ἡ κατὰ τὸ εἶδος φύσις. Cf. previous n.

[4] *Gen. An.* ii. 3, 767, b, 5: ὁ μὴ ἐοικὼς τοῖς γονεῦσιν ἤδη τρόπον τινὰ τέρας ἐστίν.

[5] *Polit.* i. 6, 1255, b, 1: ἀξιοῦσι γάρ, ὥσπερ ἐξ ἀνθρώπου ἄνθρωπον καὶ ἐκ θηρίων γίνεσθαι θηρίον, οὕτω καὶ ἐξ ἀγαθῶν ἀγαθόν·

does not correspond to that of the soul.[1] Indeed, he looks on all the female sex as imperfect and mutilated in comparison with the male, because the informing force of the man was insufficient to overcome the matter taken from the woman in the act of procreation.[2] Again the brutes are dwarfish as compared with human beings, because the upper members of their body are not properly proportioned to the lower;[3] they are the imperfect attempts of nature to make men—a form of development analogous to that of children.[4] Moreover, among the animals we may discern a further malformation in the case of single tribes—the mole, for instance[5]—or, to speak more accurately, we may distinguish between more perfect and less perfect animals: such as have blood are more perfect than such as have none;[6] the tame than the wild;[7] those which possess but one centre of organic life than those which are provided with several.[8] In like manner, vegetables, as compared

ἡ δὲ φύσις βούλεται μὲν τοῦτο ποιεῖν πολλάκις, οὐ μέντοι δύναται.

[1] *Polit.* i. 5, 1254, b, 27: βούλεται μὲν οὖν ἡ φύσις καὶ τὰ σώματα διαφέροντα ποιεῖν τὰ τῶν ἐλευθέρων καὶ τῶν δούλων, . . . συμβαίνει δὲ πολλάκις τοὐναντιόν.

[2] Cf. *infra*, the section in Ch. X. on Sex in Animals.

[3] *Part. An.* iv. 10, 686, b, 2, 20: πάντα γάρ ἐστι τὰ ζῷα νανώδη τἆλλα παρὰ τὸν ἄνθρωπον. Cf. c. 12, 695, a, 8. Children also, for the same reason, are νανώδη; *Part. An.* iv. 10, 686, b, 10; *Ingr. An.* 11, 710, b, 12; *De Mem.* c. 2 *fin.* and *passim.*

[4] *Hist. An.* viii. 1, 588, a, 31: the soul of children hardly differs from that of a beast.

[5] *Hist. An.* iv. 8, 533, a, 2.

[6] *Gen. An.* ii. 1, 732, a, 16.

[7] *Polit.* i. 5, 1254, b, 10: τὰ μὲν ἥμερα [ζῷα] τῶν ἀγρίων βελτίω τὴν φύσιν. Aristotle admits, however, himself, *Part. An.* i. 3, 643, b, 3, that the division of animals into tame and wild is a false one, as all tame animals are found also in a wild condition. The greater perfection of tame animals is therefore something that is acquired; so far as it is φύσει, it consists in a mere capacity.

[8] *Part. An.* iv. 5, 682, a, 6, where also it is added: nature, indeed, desires to give to such creatures only one central organ, but, being unable to do this, she is forced to give them several. In the *Problems* (x. 45) the writer goes so far as to say that

with animals, are incomplete.[1] They display design but in a less developed form;[2] and they too, as we shall see, have an animate existence, although only in the lowest stage of its development and in its most rudimentary outline. Aristotle even goes further and recognises a degree of life, though the least possible, in what appears to be inorganic.[3] Thus Nature as a whole is the gradual conquest of Form over Matter—a continual progression towards more perfect development of life. That which is absolutely first, or Form, in its temporal origin is last, since all Becoming is a movement out of Matter into Form, and the beginning (that which comes first in the order of thought) is also in every case the end.[4] It follows that complex existences must be posterior to simple ones—the organic to the inorganic.[5] Aristotle, however, does not carry this thought beyond the sphere of earthly existence. He applies it chiefly to organic nature, in which he first had the insight to discover a continuous progress from inanimate to animate, from imperfect to perfect forms of existence.

nature produces wild plants and animals in greater quantity than tame ones, because it is easier to make what is imperfect than what is perfect, and because nature, like art, is only able to create the better after long practice. This, however, is an exaggeration of the Aristotelian doctrine of nature's weakness.

[1] Cf. *Gen. An.* iii. 7, 757, b, 19, 24.

[2] *Phys.* ii. 8, 199, b, 9: καὶ ἐν τοῖς φυτοῖς ἔνεστι τὸ ἕνεκά του, ἧττον δὲ διήρθρωται.

[3] See p. 460, n. 3, *supra*; and Ch. X. *infra*, at the end of pt. i.

[4] *Part. An.* ii. 1, 646, a, 25: τὰ ὕστερα τῇ γενέσει πρότερα τὴν φύσιν ἐστὶ, καὶ πρῶτον τὸ τῇ γενέσει τελευταῖον . . . τῷ μὲν οὖν χρόνῳ προτέραν τὴν ὕλην ἀναγκαῖον εἶναι καὶ τὴν γένεσιν, τῷ λόγῳ δὲ τὴν ἑκάστου μορφήν. *Metaph.* ix. 8, 1050, a, 7: ἅπαν ἐπ' ἀρχὴν βαδίζει τὸ γιγνόμενον καὶ τέλος· ἀρχὴ γὰρ τὸ οὗ ἕνεκα, τοῦ τέλους δ' ἕνεκα ἡ γένεσις. See also p. 205, n. 2, *supra*.

[5] *Part. An.* 646, b, 4. *Meteor.* iv. 12, 389, b, 29: ἀεὶ δὲ, μᾶλλον δῆλον [τί ἕκαστον] ἐπὶ τῶν ὑστέρων καὶ ὅλως ὅσα οἷον ὄργανα καὶ ἕνεκά

# CHAPTER IX

## CONTINUATION

### B.—*The Universe and the Elements*

TURNING now from these more general inquiries into nature to the consideration of the actual constitution of the world, Aristotle comes upon a question which had occupied a leading place in previous metaphysical discussions—the question, namely, of creation. His predecessors had without exception assigned to the world in which we live a definite beginning in time—some, such as Anaxagoras, Plato, and the Pythagoreans,[1] holding that this world is the only one; others that the world we see is only one among an infinite series of other worlds both past and present.[2] Aristotle was the first to declare that our world is eternal and unbegotten.[3] This conviction seems to have early forced itself upon him.[4] Although in his system it is not

*του*. We have a clearer idea of the true nature of man than of flesh, bones, &c., and a better idea of the nature of the latter than of the elements. Τὸ γὰρ οὗ ἕνεκα ἥκιστα ἐνταῦθα δῆλον ὅπου πλεῖστον τῆς ὕλης· ὥσπερ γὰρ εἰ τὰ ἔσχατα ληφθείη, ἡ μὲν ὕλη οὐθὲν ἄλλο παρ' αὐτὴν, ἡ δ' οὐσία οὐθὲν ἄλλο ἢ ὁ λόγος, τὰ δὲ μεταξὺ ἀνάλογον τῷ ἐγγὺς εἶναι ἕκαστον, ἐπεὶ καὶ τούτων ὁτιοῦν ἐστιν ἕνεκά του.

[1] On the latter cf. ZELL. *Ph. d. Gr.* pt. i. 378 sqq. 410 sq.

[2] The atomic school held the existence of both; Anaximander, Anaximenes, Diogenes, and Empedocles placed the series in the past. On Heraclitus cf. ZELL. *Ph. d. Gr.* pt. i. 586, 2 *ad fin.* 629, 1 *ad fin.*, and on Xenophanes, *ibid.* 498, 3 *fin.*

[3] As he says himself in the *De Cælo*, i. 10, 279, b, 12.

[4] CIC. *Acad.* ii. 38, 119 (*Ar. Fr.* 18), quotes probably from

placed in direct connection with the doctrine of the eternity of motion,[1] yet it follows, equally with it, from the consideration that the operation of creative force in the world must be as eternal and unchangeable as that force itself, and that therefore the universe which is produced by it, however the individual parts may change,[2] cannot as a whole have had a beginning in time. Aristotle, indeed, nowhere expressly states this result in the works that have come down to us, although he approaches very near to it.[3] He contents himself, in

the treatise Π. φιλοσοφίας (see p. 56 sq. *supra*), at any rate from one of the dialogues, as Aristotle's view: 'Neque enim ortum esse unquam mundum, quod nulla fuerit novo consilio inito tam praeclari operis inceptio, et ita esse eum undique aptum ut nulla vis tantos queat motus mutationemque moliri, nulla senectus diuturnitate temporum existere ut hic ornatus unquam dilapsus occidat.' (Cf. PLATO, *Tim.* 34, B, 68, E, and elsewhere.) So Ps. PHILO, *Ætern. M.* ii. 489 (*Ar. Fr.* 17), where it is declared to be δεινὴ ἀθεότης to regard the ὁρατὸς θεὸς as no better than any human product.

[1] See p. 387, *supra*. The latter is even quite compatible with the doctrine of the birth and destruction of the world.

[2] On this, cf. p. 468, n. 3.

[3] *Phys.* viii. 1, 251, a, 20 sqq. where, in opposing the view that motion had ever a beginning, he says: had the *movens* and the *mobile* existed without producing any motion, the transition from rest to motion could only have been effected by a previous change either in one or both of them, and we should have to suppose a προτέρα μεταβολὴ τῆς πρώτης. Similarly we should have to conclude that as a preliminary to the transition from creation to destruction of the world or *vice versa* a change must take place in the creative force or in the material upon which it works. If both remain unchanged their mutual relation must also remain unchanged, and therefore also the resultant effect. But according to Aristotle, God is eternal, and unchangeable; matter, on the other hand (setting aside the doctrine of the immutability of the material of which the heavens are made), we know can only suffer change through the operation of the moving cause. If, therefore, the latter is unchangeable, its relation to the matter and the universe which is its product must be unchangeable. This is the argument indicated by Cicero in the passage quoted above, where Aristotle declares it to be inconceivable that so perfect a product as the world could

his investigations into the origin of the world, with proving that motion is eternal, and refuting the doctrine that the world has a beginning but no end.[1] The doctrine, however, is clearly involved in his metaphysics. For if the *primum movens* is unchangeable, the effect which it produces upon the world must always be the same. It cannot at one time act as a creative, at another as a destructive, force. The same conclusion follows also from Aristotle's scientific doctrine of the immutability of the material of which the heavenly spheres and the stars are made. Not only, therefore, does the doctrine of a beginning and end of the world in the sense of an absolute birth and destruction find no place in Ari-

have had a beginning *novo consilio inito*; whence it may be concluded that the creative force must have produced the best from all eternity in virtue of its own unchangeable perfection.

[1] Aristotle devotes *De Cœlo*, i. 10–12, to the proof that the heavens are without beginning and end, confining himself, however, almost exclusively to the attack on the Platonic view, that, while they will endure for ever, they yet had a beginning in time. His chief argument against it is that beginning and endlessness, end and beginninglessness, are mutually exclusive. That which exists for an endless period can neither begin nor cease to be; in either case there must be a time in which it is not (see c. 12, 281, b, 18 sqq. where, however, it is proved in too formal a way). Why, moreover, should that which has not existed for all eternity begin to be at this particular moment? or why should that which has been from all eternity cease at this particular moment to exist? (283, a, 11) It is its own nature which constitutes a thing without beginning or end, and this in such a case excludes the possibility of not-being; the nature of that which has had a beginning and is liable to perish must, on the other hand, include it. The latter, therefore, cannot last for ever any more than the former can begin or end (l. 29 sqq.; cf. p. 366, n. 1, *fin.* and the passage quoted, *ibid. init.* from *Metaph.* ix. 8). The views, on the other hand, of those who hold that the world has both beginning and end are here only lightly touched upon. The atomic view Aristotle considered that he had disposed of by his doctrine of the unity of the world, while in reference to the view of Heraclitus and Empedocles he contents himself with remarking (c. 10, 280, a,

stotle's system, but even such a fundamental change in the constitution of the world as is presupposed by Heraclitus and Empedocles is wholly inconsistent both with his cosmology and his metaphysics. The question for Aristotle is not of any origin of the world in time, but only of its actual character and constitution.

The universe is divided, according to Aristotle, into two halves of opposite character—the one terrestrial, and the other celestial. This opposition is at once revealed by the testimony of our senses: and Aristotle can hardly have come to it in any other way. The unalterable nature of the stars and the changeless regularity of their movements form, in his opinion, so strong a contrast [1] to terrestrial corruptibility and change, that we are forced to recognise two essentially different realms, subject to different laws. The more important this opposition seems to him to be, the more he strives to demonstrate its necessity. All natural bodies, he argues, are capable of movement in space. But movement in space is either rectilineal or circular or a compound of both. The third of these being derived from the first two, it follows that the latter alone are simple and original—rectilineal motion proceeding from the centre to the circumference, or *vice versa*, and circular motion revolving round the centre. If these are the first natural motions, there must be certain bodies which by reason of their nature are the subjects of such movement, and which are consequently the

11 sqq.; cf. ZELL. *Ph. d. Gr.* pt. i. 629, 1 *ad fin.*) that it attributes to the world a mere change of form and not a veritable birth and destruction.

[1] That it was the observation of this which led Aristotle in the first instance to make his

most primitive and ancient bodies. Those, on the contrary, which exhibit a composite movement, must be formed by combination from them, and receive their particular bias from the constituent which preponderates in their composition. That which is natural is always earlier than that which is opposed to nature and violent. It follows that circular, and also rectilineal, movement must be naturally fitted for some body or other, the more so that rotation is the only unbroken and interminable movement, and nothing that is contrary to nature fulfils these conditions. Accordingly there must exist two sorts of simple bodies—the one originally destined for rectilineal, the other for circular, movement.[1] Rectilineal movement has opposite directions: it is either upwards or downwards, passing from centre to circumference, or *vice versa*. Consequently, the bodies which exhibit it must be of opposite natures, destined for the one or the other kind of motion: that is, they must be either light or heavy. Circular motion, on the other hand, exhibits no such contraries. It starts from any point towards any point in the circumference. So the body which is naturally qualified for it must likewise be without contrariety. It can neither be heavy nor light, since it does not rise or fall, and in fact it cannot exhibit any kind of rectilineal motion. It is even impossible to communicate either upward or downward motion to it by force, since if the one were unnatural to it the other must[2] be

distinction between two realms of being is obvious from his whole treatment of the subject. Cf. also p. 366, n. 1.

[1] *De Cœlo*, i. 2, 268, b, 14 sqq.

[2] According to the principle already laid down (c. 2, 269, a, 10, 14) as the basis of the discussion (see p. 224, n. 3), ἓν ἑνὶ ἐναντίον, which, when thus universally expressed, is certainly open to dispute.

its natural motion.[1] The body that is destined for circular motion is also without beginning or ending, subject to neither increase nor diminution, neither impression nor change.[2] His argument for this is that everything that comes into being springs from its opposite, and everything that perishes is resolved into the same;[3] all increase and decrease depend upon addition or subtraction of the matter out of which a thing has grown, and therefore that which, being without beginning, possesses no such matter, cannot increase or decrease; all bodies, finally, which alter, either increase or decrease, and where there is no such process neither is there any alteration.[4]

[1] *Ibid.* c. 3, 269, b, 18–270, a, 12; nor can the position βίᾳ μὲν γὰρ ἐνδέχεται τὴν ἄλλου καὶ ἑτέρου [sc. κίνησιν κινεῖσθαι] (c. 2, 269, a, 7) be accepted except provisionally as of universal validity. As is shown in the sequel, it is inapplicable to the æther. The position upon which the latter conclusion rests, (viz. that movement in a circle has no opposite). Aristotle, indeed, endeavours (c. 4) further to establish by special proofs. But he cannot prove that the motion may not be crooked or oblique; for if we have two opposite motions on the same or on parallel lines which deviate in opposite directions, it does not make the slightest difference whether the lines are straight or circular. Moreover, the courses of the fixed stars and of the planets are actually in opposite directions; why may these bodies not, then, consist of different ætherial substance? We are not warranted, however, with MEYER (*Aristot. Thierkunde*, 393) in casting a doubt upon Aristotle's clearly expressed meaning, merely on the ground of the actual difficulties that beset the theory.

[2] He says, *De Cœlo*, i. 3, 270, a, 13, b, 1: ἀγένητον καὶ ἄφθαρτον καὶ ἀναυξὲς καὶ ἀναλλοίωτον, ἀΐδιον καὶ οὔτ' αὔξησιν ἔχον οὔτε φθίσιν, ἀλλ' ἀγήρατον καὶ ἀναλλοίωτον καὶ ἀπαθές. Cf. *Metaph.* viii. 4, 1044, b, 7, xii. 1, 2, 1069, a, 30, b, 25.

[3] On this point, cf. also p. 341 sq.

[4] *De Cœlo*, i. 3, 270, a, 13–35. The immutability of the body which has no opposite might have been proved more simply and conclusively from the proposition (p. 341, and p. 353 sq. above) that all change means transition from one state into its opposite, and that a thing can only be operated upon by its opposite. Aristotle, however, does not here adopt this method, as his investigation into the conception of change and affection was not published until later—in his

This position draws further support from experience. For he contends that if the spaces of the heavens, as well as the intermediate space between heaven and earth, were full of air or fire, then the bulk of these elements, considering the magnitude of the stars and their distance from each other, would be so hugely disproportioned to that of the remaining elements that the latter could not preserve their equilibrium, but would be swallowed up by them. A proper proportion between the elements [1] can therefore only be maintained on the hypothesis that the celestial space is filled with a body different from the matter of the elements.[2] We are also led to believe that this body is superior to all change, by the fact that antiquity, so far as tradition reaches, furnishes us with no evidence of the least alteration in the fabric of the heaven or its parts.[3] Finally, the unthinking belief of humanity harmonises with this conviction, and such a belief deserves respect as the inheritance of unnumbered generations.[4] All nations have placed the residence of the gods in heaven, because they were convinced of its immortal and divine nature. The name 'æther' may be traced to the same source, for Aristotle, like Plato,[5] derives it from *ἀεὶ θεῖν*, from the restless rotation of

treatise on birth and destruction.

[1] Such a proportion involves that there is as much air and as much fire as will be produced by the transformation of all water into air and all air into fire on the basis of the existing quantitative extent of these bodies.

[2] *Meteor.* i. 3, 339, b, 13–340, a, 18.

[3] *De Cœlo*, i. 3, 270, b, 11.

[4] *οὐ γὰρ ἅπαξ οὐδὲ δὶς ἀλλ' ἀπειράκις δεῖ νομίζειν τὰς αὐτὰς ἀφικνεῖσθαι δόξας εἰς ἡμᾶς.* *De Cœlo*, 270, b, 19. See *Meteor.* 339, b, 27, where the same reason is given in almost the same words, and *Metaph.* xii. 8 *ad fin.* See *infra*, the section of Ch. IX. on the Heavens, and Ch. XII. pt. 2.

[5] PLATO, *Crat.* 410, B.

the celestial globes, and not from *αἴθειν*.[1] The conclusion is that the æther must be distinguished from all elementary matter.[2] Without opposition and without

[1] *De Cœlo*, i. 3, 270, b, 4–25; *Meteor*. i. 3, 339, b, 19 sqq.; and following these passages *De Mundo*, c. 2, 392, a, 5. On the name 'æther,' cf. ZELL. *Ph. d. Gr*. i. 897, 4 *ad fin*.

[2] Although it is called **πρῶτον στοιχεῖον**, *De Cœlo*, iii. 1, 298, b, 6; *Meteor*. i. 1, 338, b, 21; c. 3, 339, b, 16, 340, b, 11, **τὸ τῶν ἄστρων στοιχεῖον**; *Gen. An*. iii. 3, 737, a, 1, it is yet expressly distinguished in these passages from the four **στοιχεῖα**. *Gen. An*. ii. 3, 736, b, 29, it is called **ἕτερον σῶμα καὶ θειότερον τῶν καλουμένων στοιχείων**; *Meteor*. i. 3, 340, b, 7 (cf. p. 488, n. 3, *infra*), **ἕτερον σῶμα πυρός τε καὶ ἀέρος**; and *De Cœlo*, i. 2, 269, a, 30: *οὐσία σώματος ἄλλη παρὰ τὰς ἐνταῦθα συστάσεις θειοτέρα καὶ προτέρα τούτων ἁπάντων*; cf. *ibid*. c. 3 (following n.). If, therefore, we understand by **στοιχεῖα** only such simple bodies as stand to one another in the relation of opposites, and pass into one another, we cannot reckon the æther among these. Only when we extend the meaning of the word to embrace *all* simple bodies can we call it a **στοιχεῖον**. On the other hand, it is, to say the least of it, inaccurate and misleading to say that according to Aristotle the celestial spheres have 'no material substratum' (BRENTANO, *Psychol. d. Arist*. 198; HERTLING, *Mat. und Form*, 22), that 'the æther consists of a material which is no material, of an immaterial material' (KAMPE, *Erkenntnissth. d. Arist*. 30 sq.) that all that is meant by the **ὕλη** of the stars is the potentiality they possess of motion and change in space, and that in this sense we might even attribute **ὕλη** to **νοῦς** (HERTLING, *ibid*. 23). Aristotle certainly says, *Metaph*. viii. 4, 1044, b, 7: in the case of **γεννηταὶ οὐσίαι**, we have to deal both with their matter and form; it is otherwise with **φυσικαὶ μὲν ἀΐδιοι δὲ οὐσίαι**. '**Ἴσως γὰρ ἔνια οὐκ ἔχει ὕλην, ἢ οὐ τοιαύτην ἀλλὰ μόνον κατὰ τόπον κινητήν**.' Matter, however, is denied of the heavenly bodies only in the sense in which it belongs to temporal things. Aristotle means that if we understand by **ὕλη** that of which a thing is made, the **ὑποκείμενον γενέσεως καὶ φθορᾶς δεκτικὸν** (as it is defined, *Gen. et Corr*. i. 4, 320, a, 2), the uncreated and eternal has no **ὕλη** in this sense; but if we take it in the more general sense of the substratum of change, the **δυνάμει ὄν**, it has **ὕλη**, inasmuch as it is capable of movement in space. That this is all that Aristotle means is obvious from the parallel passages, xii. 2, 1069, b, 24: **πάντα δ' ὕλην ἔχει ὅσα μεταβάλλει . . . καὶ τῶν ἀϊδίων ὅσα μὴ γεννητὰ κινητὰ δὲ φορᾷ, ἀλλ' οὐ γεννητήν, ἀλλὰ πόθεν ποι**; viii. 1, 1042, b, 5: **οὐ γὰρ ἀνάγκη, εἴ τι ὕλην ἔχει τοπικήν, τοῦτο καὶ γεννητὴν καὶ φθαρτὴν ἔχειν**; c. 8, 1050, b, 20: **οὐδ' εἴ τι κινούμενον ἀΐδιον, οὐκ ἔστι κατὰ δύναμιν κινούμενον ἀλλ' ἢ πόθεν ποι**· [only in respect of

mutation, it stands above the strife of the elements: these belong to the terrestrial, it to the celestial, world: of it are formed the heavenly spheres and stars; it is the god-like in the realm of matter.[1]

The four elements are different in all respects. If circular movement is peculiar to the æther, their movement is rectilineal. But, as we have remarked, rectilineal motion follows two opposite directions, up and down, toward the circumference and toward the centre. That which tends naturally downwards is heavy; that which rises is light. Accordingly the elements exhibit the opposites of heavy and light.[2] This opposition cannot, he holds, be reduced to quantitative differences of magnitude, of mathematical figure, or density; it is original and qualitative. The peculiarities of the elementary materials we cannot explain either, with Plato and Democritus, by the mathematical qualities of atoms, or, with the elder physicists, by the rarefaction and condensation

locality can it be said to move merely δυνάμει and not ἐνεργείᾳ, inasmuch as it is not yet in the place to which it is moving] τούτου δ' [i.e. τοῦ πόθεν ποι κινεῖσθαι] ὕλην οὐθὲν κωλύει ὑπάρχειν. *De Cœlo*, i. 9, 278, a, 10 sqq. Aristotle expressly says: ὁ οὐρανὸς as a universal conception is different from ὅδε ὁ οὐρανός; the former is εἶδος καὶ μορφή, the latter τῇ ὕλῃ μεμιγμένον. Still less can we infer from *Metaph.* viii 4, that the celestial globes are incorporeal beings (like the æther, they are frequently called θεῖα σώματα, &c.: see *Ind. Ar.* 742, a, 43–60); we cannot, therefore, suppose for a moment that ὕλη is denied of them in the same sense as it is denied of the immaterial Nous, or that it can be attributed to the latter in the same sense as to the former.

[1] It is called θεῖος, *Meteor.* i. 3, 339, b, 25; also, similarly, *De Cœlo*, i. 3, 270, b, 11, 20: ἡ πρώτη οὐσία τῶν σωμάτων, τὸ πρῶτον σῶμα, ἕτερόν τι ὂν παρὰ γῆν καὶ πῦρ καὶ ἀέρα καὶ ὕδωρ. *Ibid.* ii. 1, 284, a, 4 Later philosophers, such as Cicero's Epicurean (*N. De.* i. 13, 33, cf. KRISCHE, *Forsch.*, 306 sqq.) and the pseudo-Justin Cohort. c. 5, 36, identify on this ground God and the æther.

[2] See p. 473 sq.

of one and the same primitive material. We have already proved this point with regard to the first hypothesis.[1] But those who deduce the differences of matter from a condensation and rarefaction of some one original element are, besides other arguments, met by the objection that they do not explain the distinction between light and heavy substance. They confine the difference between the elements to a mere relation of magnitudes, and accordingly represent it as something merely relative.[2] To Aristotle's mind, the opposition of rectilineal movements and natural localities at once demands a qualitative difference between the elements. Rectilineal motion being just as primitive as circular motion, there must be certain bodies which are especially designed for it.[3] Again, since it includes two tendencies, upward and downward, we must in the first place assume two bodies, of which one naturally sinks, the other rises, the one tending to the centre, the other to the circumference of the world. In the second place, we must imagine an intermediate element, or rather a pair of elements, the one approximating to the former, and the other to the latter. Of these four bodies, the first two are earth and fire, the other two water and air. Earth is absolutely heavy and entirely devoid of lightness; fire is absolutely light and entirely devoid of heaviness. The one moves straight to the centre, and therefore sinks below all other bodies; the other moves straight to the circumference, and therefore

[1] See p. 443 sqq.

[2] Aristotle discusses this view *De Cœlo*, iii. 5, cf. iv. 5, 312, b, 20; *Metaph.* i. 8, 988, b, 29 sqq.

[3] See p. 473.

rises above all other bodies. Water and air, on the other hand, are only relatively heavy, and therefore also relatively light. Water is heavier than air and fire, but lighter than earth; air heavier than fire, but lighter than water and earth. Under no possible circumstances, unless compelled by forcible movement, does fire sink of itself into the place of air; nor, again, does earth rise into that of water. Air and water, on the contrary, sink into the lower regions when the matter which fills them is withdrawn.[1] Earth is everywhere heavy; water, everywhere except in earth; air, everywhere except in earth and water;[2] fire, nowhere.[3] Therefore of two bodies the one which holds the more air may be heavier in air but lighter in water than the other—a hundred-weight of wood, for instance, than a pound of lead.[4]

We may arrive at these four elements even more definitely by another process of reasoning.[5] All

[1] Properly, indeed, they ought to rise into the higher; Aristotle admits himself, *De Cœlo*, iv. 5, 312, b, sqq., that this does happen unless external force be applied, —without, however, explaining a circumstance which has so important a bearing upon his theory.

[2] That even air has weight is obvious from the fact that a bladder full of air is heavier than an empty one; *ibid.* c. 4, 311, b, 9.

[3] Aristotle, in the passage just referred to, finds in this theory an explanation of the difference between absolute and specific gravity.

[4] *De Cœlo*, iv. 3–5. The same ideas occur, in a somewhat different application, ii. 3, 286, a, 12 sqq. It is there said that the world cannot consist of æther alone, for it must have an immovable centre. There must therefore be a body whose nature it is to rest at the centre and move towards it, and therefore also one of an opposite nature. We thus have earth and fire, which in turn require water and air as intermediate elements.

[5] For what follows, see *Gen. et Corr.* ii. 2, 3. The true author of this theory of the elements is said to be Hippocrates (according to IDELER, *Arist. Meteor.* ii. 389, who appeals to GALEN, *De Elem. sec. Hippocr.* i. 9, *Opp.* ed. Kühn, i. 481 sq.). This, however, is uncertain for several reasons. In the first place, neither of the works here referred to, Π. φύσιος ἀνθρώπου and Π. σαρκῶν, can be

bodies capable of being perceived by the senses are prehensible; but all qualities perceptible by the sense of touch, with the exception of gravity and levity,[1] are reducible to four—warmth, cold, dryness, moisture.[2] Aristotle regards the first two of these properties as active, the others as passive.[3] Now, by joining these

attributed to Hippocrates. The former is without doubt the work, or an extract from a work, of Polybus, his son-in-law: the latter is of post-Aristotelian origin, cf. KÜHN, *Hippocr. Opp.* I. cxlvii., clv.; LITTRÉ, *Œuvres d' Hippocrate*, i. 345 sqq. 384. Again, while the treatise Π. *φύσιος ἀνθρώπου* recognises (c. 1 *init.*) Empedocles's four elements and even makes heat and cold, dryness and moisture the constituent elements of every living thing (c. 3), it yet does not bring these two positions together as Aristotle does, or deduce each of the four elements from the various combinations of those four properties into pairs; nor, indeed, does GALEN (see *supra*) claim this for it. The treatise Π. *σαρκῶν*, on the other hand, refers (at i. 425, K) to the Aristotelian account of the elements, but this merely proves that it is later than Aristotle. That heat and cold, dryness and moisture, were regarded as the elements of things in the medical schools of his time, is corroborated by PLATO, *Sym.* 186, D. 187, D. The early physicists regarded the conflict of heat and cold as the primary principle of evolution and frequently united with it that of dryness and moisture, without, however, as yet expressly combining these four as the primary properties of things. Cf. ZELL. *Ph. d. Gr.* i. 205, 241, 519 sq. 897.

[1] We have not here to do with these, as they do not indicate a particular kind of action and passion; the elements, on the other hand, stand to one another in that particular relation of action and passion (*ibid.* 329, b, 20), which the treatise on birth and destruction chiefly discusses.

[2] *Ibid.* 329, b, 24: *θερμὸν δὲ καὶ ψυχρὸν καὶ ὑγρὸν καὶ ξηρὸν τὰ μὲν τῷ ποιητικὰ εἶναι τὰ δὲ τῷ παθητικὰ λέγεται· θερμὸν γάρ ἐστι τὸ συγκρῖνον τὰ ὁμογενῆ* [from which it follows that fire separates heterogeneous elements], *ψυχρὸν δὲ τὸ συνάγον καὶ συγκρῖνον ὁμοίως τά τε συγγενῆ καὶ τὰ μὴ ὁμόφυλα, ὑγρὸν δὲ τὸ ἀόριστον οἰκείῳ ὅρῳ εὐόριστον ὄν, ξηρὸν δὲ τὸ ἀόριστον μὲν οἰκείῳ ὅρῳ, δυσόριστον δέ.* (Cf. *Meteor.* iv. 4, 381, b, b, 29.) The qualities *λεπτὸν, παχὺ, γλίσχρον, κραῦρον, μαλακὸν, σκληρὸν* are reduced to these primary qualities; *διερὸν* and *βεβρεγμένον* form two kinds of moisture, *ξηρὸν* in its narrower sense and *πεπηγὸς* of dryness.

[3] *Meteor.* iv. 1 *init.*: *ἐπεὶ δὲ τέτταρα διώρισται αἴτια τῶν στοιχείων, . . . ὧν τὰ μὲν δύο ποιητικὰ, τὸ θερμὸν καὶ τὸ ψυχρὸν, τὰ δὲ δύο παθητικὰ, τὸ ξηρὸν καὶ τὸ ὑγρόν· ἡ δὲ πίστις τούτων ἐκ τῆς ἐπαγωγῆς. φαίνεται γὰρ ἐν πᾶσιν ἡ μὲν*

four properties in pairs, we obtain, after eliminating two impossible combinations, four that are possible, in which one active and one passive property are always united, and thus four simple bodies or elements are exhibited [1]—warm and dry, or fire; warm and moist, or air; [2] cold and moist, or water; cold and dry, or earth. [3] These are the four sorts of matter of which all composite bodies consist, which are excreted from all,

θερμότης καὶ ψυχρότης ὁρίζουσαι καὶ συμφύουσαι καὶ μεταβάλλουσαι τὰ ὁμογενῆ καὶ τὰ μὴ ὁμογενῆ, καὶ ὑγραίνουσαι καὶ ξηραίνουσαι καὶ σκληρύνουσαι καὶ μαλάττουσαι, τὰ δὲ ξηρὰ καὶ ὑγρὰ ὁριζόμενα καὶ τἆλλα τὰ εἰρημένα πάθη πάσχοντα. Cf. c. 4 *init.* c. 5, 382, a, 27 sqq. c. 10, 388, a, 21, c. 11, 389, a, 29.

[1] In his description of these four primary substances and their fundamental attributes Aristotle is not quite consistent. Thus *Gen. et Corr.* ii. 2, 329, b, 7, 13, c. 3, 330, a, 30, 33, and *Meteor.* i. 2, 339, a, 13, he calls the latter (heat, cold, &c.) both στοιχεῖα and ἀρχαί, the bodies of which they are attributes, ἁπλᾶ σώματα, *Ind. Arist.* 76, b, 15 sqq. Again, they are frequently called στοιχεῖα with the addition τὰ καλούμενα [*Phys.* i. 4, 187, a, 26, iii. 5, 304, b, 33. *Gen. et Corr.* ii. 1, 328, b, 31, 329, a, 26. *Meteor.* i. 3, 339, b, 5. *Gen. An.* ii. 3, 736, b, 29. *Metaph.* i. 4, 985, a, 34: τὰ ὡς ἐν ὕλης εἴδει λεγόμενα στοιχεῖα], *Part. An.* ii. 1, 646, a, 13 even τὰ καλούμενα ὑπό τινων στοιχεῖα, so that we clearly see that he is merely following in this the usage of others. On the other hand, στοιχεῖον—which in its most general sense indicates constituent parts of any kind (ἐνυπάρχοντα), and thus even the component parts of a conception or a demonstration, as well as the form as constituent part of the thing, but in a more special sense the ἐνυπάρχον ὡς ὕλην (BONITZ, *Ind. Arist.* 702, a, 18 sqq.)—stands for the ultimate material constituents of bodies themselves, that εἰς ὃ διαιρεῖται τὰ σώματα ἔσχατα, ἐκεῖνα δὲ μηκέτ' εἰς ἄλλα εἴδει διαφέροντα [*Metaph.* v. 3, 1014, a, 32; cf. i. 3, 983, b, 8], εἰς ὃ τἆλλα σώματα διαιρεῖται, ἐνυπάρχον δυνάμει ἢ ἐνεργείᾳ, αὐτὸ δ' ἔστιν ἀδιαίρετον εἰς ἕτερα τῷ εἴδει (*De Cælo*, iii. 3, 303, a, 15). So *Gen. et Corr.* ii. 7 *init.*; *Meteor.* i. 1 *init.* (τῶν στοιχείων τῶν σωματικῶν); ii. 2, 355, b, 1, iv. 1 *init.*; *De Cælo*, iii. 3 *init.* c. 5 *init.*, and innumerable other places. The original oppositions, moreover, which succeed primary substance as the second principle of existence (as the elements are the third, *Gen. et Corr.* ii. 1, 329, a, 32), are called αἴτια τῶν στοιχείων, *Meteor.* iv. 1 *init.*

[2] 'Οἷον ἀτμὶς γὰρ ὁ ἀήρ,' *Gen. et Corr.* ii. 3, 330, b, 4.

[3] *Gen. et Corr.* ii. 3. *Meteor.* iv. 1 *init.*

and into which all are resolved.[1] Their own primitive and indecomposable nature is proved by the fact that though they can, by transmutation, pass into each other, they never excrete any other body from themselves.[2] Every composite body in the terrestrial kingdom contains all of them.[3] Yet they are never revealed to our experience in perfect purity.[4] For example, elemental fire must not be confounded with a flame, which is produced by an intensification of its warmth, as ice is by an intensification of the cold natural to water. Elemental fire is caloric, or warm and dry evaporation;[5] flame, on the contrary, is no constant

[1] *De Cœlo*, iii. 3. *Metaph*. v. 3, see p. 481, n. 1, and elsewhere.

[2] *De Cœlo*, iii. 3, 302, a, 19 sqq.

[3] As is more fully proved, *Gen. et Corr.* ii. 8.

[4] *Gen. et Corr.* ii. 3, 330, b, 21: οὐκ ἔστι δὲ τὸ πῦρ καὶ ὁ ἀὴρ καὶ ἕκαστον τῶν εἰρημένων ἁπλοῦν, ἀλλὰ μικτόν· τὰ δ' ἁπλᾶ τοιαῦτα μέν ἐστιν, οὐ μέντοι ταὐτὰ [ταῦτα], οἷον εἴ τι τῷ πυρὶ ὅμοιον, πυροειδές, οὐ πῦρ, καὶ τὸ τῷ ἀέρι ἀεροειδές· ὁμοίως δὲ κἀπὶ τῶν ἄλλων. Cf. *Meteor*. ii. 4, 359, b, 32, where, referring to the distinction between wet and dry vapour, which is discussed below, he says: ἔστι δ' οὔτε τὸ ὑγρὸν ἄνευ τοῦ ξηροῦ οὔτε τὸ ξηρὸν ἄνευ τοῦ ὑγροῦ, ἀλλὰ πάντα ταῦτα λέγεται κατὰ τὴν ὑπεροχήν. *Ibid*. ii. 5, 362, a, 9: dry vapours are only produced where moisture is present. *Ibid*. iv. 8. According to *Phys*. iv. 7, 214, a, 32, air is intermingled with water; whereas, in *De Sensu*, c. 5, 443, a, 4, this is controverted; cf. MEYER, *Arist. Thierkunde*, 404 sq.

[5] *Gen. et Corr.* ii. 3, 330, b, 25; τὸ δὲ πῦρ ἐστιν ὑπερβολὴ θερμότητος, ὥσπερ καὶ κρύσταλλος ψυχρότητος· ἡ γὰρ πῆξις καὶ ἡ ζέσις ὑπερβολαί τινές εἰσιν, ἡ μὲν ψυχρότητος ἡ δὲ θερμότητος. εἰ οὖν ὁ κρύσταλλός ἐστι πῆξις ὑγροῦ ψυχροῦ, καὶ τὸ πῦρ ἔσται ζέσις ξηροῦ θερμοῦ. διὸ καὶ οὐδὲν οὔτ' ἐκ κρυστάλλου γίγνεται οὔτ' ἐκ πυρός. The same remark is made about fire, *Meteor*. i. 3, 340, b, 21, c. 4, 341, b, 22; cf. l. 13: πρῶτον μὲν γὰρ ὑπὸ τὴν ἐγκύκλιον φοράν ἐστι τὸ θερμὸν καὶ ξηρὸν, ὃ λέγομεν πῦρ· ἀνώνυμον γὰρ τὸ κοινόν, &c. What is called 'fire' is a kind of inflammable material (ὑπέκκαυμα) which, like smoke, can be kindled by a little motion. Heraclitus had identified fire with heat in general (see ZELL. *Ph. d. Gr.* i. 588 sq.); the distinction between fire and the heat of fire appears in his school (PLATO, *Crat*. 413, C). Aristotle had a special reason for emphasising this distinction, as is indicated by the above passage from the *Meteorology*. For it was impossible that between the aërial and the celestial sphere there should

material, but a phenomenon occasioned by the transmutation of moist and dry substance (air and earth).[1] Again, while each of the elements exhibits two essential properties, one of which in each case is its proper and distinctive characteristic—the dryness of earth, the cold of water, the 'moisture' or fluidity of air, the warmth of fire.[2] Since, finally, each element includes a passive and an active quality,[3] it follows that all act upon and are acted on by one another, that they mingle and are transformed into one another—a process, indeed, which would not otherwise be conceivable.[4] Each element may pass into all the rest, for everything goes from

be a region of fire, as he was forced to hold there was, if 'fire' included only visible flame.

[1] *Meteor.* ii. 2, 355, a, 9: ἡ μὲν γὰρ φλὸξ διὰ συνεχοῦς ὑγροῦ καὶ ξηροῦ μεταβαλλόντων γίγνεται καὶ οὐ τρέφεται [with which that which is improperly called τροφὴ, *Long. Vit.* 3, 465, b, 24, *Vita et M.* c. 5, 470, a, 2, does not conflict]· οὐ γὰρ ἡ αὐτὴ οὖσα διαμένει οὐθένα χρόνον ὡς εἰπεῖν. *Ibid.* c. 3, 357, b, 31: καθάπερ τὸ τῶν ῥεόντων ὑδάτων καὶ τὸ τῆς φλογὸς ῥεῦμα. *Vita et M.* c. 5, 470, a, 2.

[2] *Gen. et Corr.* ii. 3, 331, a, 3: οὐ μὴν ἀλλ' ἁπλῶς γε τέτταρα ὄντα [τὰ στοιχεῖα] ἑνὸς ἕκαστόν ἐστι, γῆ μὲν ξηροῦ μᾶλλον ἢ ψυχροῦ, ὕδωρ δὲ ψυχροῦ μᾶλλον ἢ ὑγροῦ, ἀὴρ δ' ὑγροῦ μᾶλλον ἢ θερμοῦ, πῦρ δὲ θερμοῦ μᾶλλον ἢ ξηροῦ. *Meteor.* iv. 4, 382, a, 3. In the latter passage Aristotle says, among other things, that earth and water alone are inhabited by living beings (on which *vide* below), because they alone are ὕλη τῶν σωμάτων. For although cold is held by Aristotle to be the primary quality of water, moisture of air, he yet tells us here: λέγεται δὲ τῶν στοιχείων ἰδιαίτατα ξηροῦ μὲν γῆ, ὑγροῦ δὲ ὕδωρ . . . τιθέμεθα δὲ ὑγροῦ σῶμα ὕδωρ, ξηροῦ δὲ γῆν (iv. 4, 5, 382, a, 3, b, 3); and since dryness and moisture are regarded as the passive or material qualities (see p. 480, *supra*), earth and water are held to be the matter of all bodies. Fire, on the other hand, represents in a special sense the element of form (*Gen. et Corr.* i. 8, 335, a, 9 sqq.), for here, as elsewhere, the containing element stands to the contained in the relation of form to matter (*De Cœlo*, iv. 4, 312, a, 11) Similarly, more reality is attributed to heat than to cold, inasmuch as the former is a positive, the latter a negative, attribute; the one is classed as being, the other as not-being (*Gen. et Corr.* i. 3, 318, b, 14).

[3] See pp. 479 sq. *supra*.

[4] *Gen. et Corr.* ii. 2, 329, b, 22, c. 7, and elsewhere; see pp. 450 sq. *supra*.

opposite to opposite; but the elements are all opposed to each other just in the same way as their distinctive properties (warmth, cold, dryness, and moisture) are opposed. The more complete this opposition is, the more difficult and the slower is the process of transition from one to the other; the less complete, the easier. Therefore, when two elements exhibit respectively a conflict of both their essential properties, the process is slower and more difficult than when they have one property in common and conflict only in respect of the other. In the latter case the alteration of one property in one of them occasions a complete transmutation into the other; while in the former case we only gain one step by such a change—for only the element intermediate between the two that are opposed is produced, and it requires a second transmutation before the metamorphosis is complete. For instance, by removing the cold of water, we obtain air; but it is only when the humidity common to water and air has been removed that we obtain fire. If the humidity of water disappears, earth is produced; but in order to generate fire, the coldness common to earth and water must be withdrawn. Hence it follows that the elements which are wholly opposed to one another are metamorphosed by an indirect process; those which are but partially opposed are transformed directly. Fire passes directly into air or earth, indirectly into water; air directly into fire or water, indirectly into earth; water directly into air or earth, indirectly into fire; earth directly into water or fire, indirectly into air.[1] Thus all the

[1] *Gen. et Corr.* ii. 4.

elements, as Heraclitus and Plato had already demonstrated,[1] form together one complete whole, a self-contained circle of generation and destruction,[2] the parts of which are incessantly undergoing transformation, but steadfastly maintaining the law of their metamorphosis, preserving the same forms and proportions in the midst of the ceaseless transmutation of their matter.[3]

These propositions concerning the nature of the elementary bodies are enough to prove that there is only one world. For if each body has its natural place, and if its very essence consists in its having it, then all bodies, unless hindered by force, must move to these their natural localities—earth to the centre, æther to circumference, and the other elements to the intermediate spaces. Hence it is impossible that there should be more than one region of earth, water, air, fire, and æther, and consequently that there should be another world besides the one in which we live. We cannot suppose that a body is forcibly retained in a locality beyond the world, since such a locality must be

[1] Cf. ZELL. *Ph. d. Gr.* i. 619, and *ibid.* ii. 680.

[2] *Gen. et Corr. ibid.* 331, b, 2: ὥστε φανερὸν ὅτι κύκλῳ τε ἔσται ἡ γένεσις τοῖς ἁπλοῖς σώμασι, &c.

[3] *Meteor.* ii. 3, 357, b, 27: it is asked, πότερον καὶ ἡ θάλαττα ἀεὶ διαμένει τῶν αὐτῶν οὖσα μορίων ἀριθμῷ, ἢ τῷ εἴδει καὶ τῷ ποσῷ μεταβαλλόντων ἀεὶ τῶν μερῶν, καθάπερ ἀὴρ καὶ τὸ πότιμον ὕδωρ καὶ τὸ πῦρ. ἀεὶ γὰρ ἄλλο καὶ ἄλλο γίνεται τούτων ἕκαστον, τὸ δ' εἶδος τοῦ πλήθους ἑκάστου τούτων μένει, καθάπερ τὸ τῶν ῥεόντων ὑδάτων καὶ τὸ τῆς φλογὸς ῥεῦμα. φανερὸν δὴ τοῦτο καὶ πιθανὸν, ὡς ἀδύνατον μὴ τὸν αὐτὸν εἶναι περὶ πάντων τούτων λόγον, καὶ διαφέρειν ταχυτῆτι καὶ βραδυτῆτι τῆς μεταβολῆς ἐπὶ πάντων τε καὶ φθορὰν εἶναι καὶ γένεσιν, ταύτην μέντοι τεταγμένως συμβαίνειν πᾶσιν αὐτοῖς. 358, b, 29: οὔτε ἀεὶ τὰ αὐτὰ μέρη διαμένει, οὔτε γῆς οὔτε θαλάττης, ἀλλὰ μόνον ὁ πᾶς ὄγκος. καὶ γὰρ καὶ περὶ γῆς ὁμοίως δεῖ ὑπολαβεῖν· τὸ μὲν γὰρ ἀνέρχεται τὸ δὲ πάλιν συγκαταβαίνει καὶ τοὺς τόπους συμμεταβάλλει τά τ' ἐπιπολάζοντα καὶ τὰ κατιόντα πάλιν. Cf. also ZELL. *Ph. d. Gr.* i. 2, 576, 620.

the natural place of some other body; and if all bodies in this one world have their place, there can be no body outside it, and consequently no space, since space is only that in which a body is or can be.[1] The same conclusion is arrived at also from another side. Several worlds would presuppose several first causes of motion, which would be specifically similar, and consequently only different in their matter. But the *primum movens* has no matter: it is single and complete in itself. It follows that the world which derives its continuous and eternal motion from the first cause must be so too.[2] If, however, we are told that the concept of the world, like all concepts, must manifest itself in several individuals, Aristotle bids us answer that this argument would be only conclusive if there were an extra-mundane matter in which this concept could incorporate itself, but since our world embraces the whole of matter, it is of necessity single in its kind, although we ought always to distinguish between its concept and the phenomenal manifestation of the same which is present to our senses.[3] If there are not several worlds now in existence, no more can there be such in the future, or have been at any past period. This world of ours is one, and single, and complete.[4]

[1] *De Cœlo*, i. 8, c. 9, 278, b, 21 sqq. 279, a, 11.

[2] This metaphysical proof, held in prospect *De Cœlo*, i. 8, 277, b, 9, is given *Metaph.* xii. 8, 1074, a, 31 sqq.; cf. also p. 388 sq., and on matter as the source of multiplicity, p. 368 sq.

[3] *De Cœlo*, i. 9; cf. p. 222.

[4] *Ibid.* 279, a, 9: ὥστ' οὔτε νῦν εἰσὶ πλείους οὐρανοὶ οὔτ' ἐγένοντο οὔτ' ἐνδέχεται γενέσθαι πλείους· ἀλλ' εἷς καὶ μόνος καὶ τέλειος οὗτος οὐρανός ἐστιν. *Ibid.* i. 1 *fin.*: particular bodies are infinite in number; τὸ δὲ πᾶν οὗ ταῦτα μόρια τέλειον ἀναγκαῖον εἶναι καὶ καθάπερ τοὔνομα σημαίνει, πάντῃ, καὶ μὴ τῇ μὲν τῇ δ' οὔ.

Furthermore, the shape of the universe is determined by the nature of the five simple bodies. Since circular motion is proper to one of them, and rectilinear motion to the rest, we obtain in the first place the distinction, touched upon above, between the two chief regions of the world—that in which circular motion rules, and that in which the opposite movements up and down hold sway: *i.e.* that which is full of æther, and that which contains the four elements. In both of them the materials lie in spherical layers one above the other. For since similar materials uniformly strive to reach their natural localities, which in turn are determined by their distance from the centre of the world, it follows that the materials of each sort are conglobated in spheres which are at all points equidistant from the centre. In the middle of the whole lies the earth—a solid sphere,[1] but in extent a relatively small portion of the world.[2] Its fixture in this locality proceeds partly

[1] Besides the argument quoted in the text, Aristotle proves the rotundity of the earth (*De Cœlo*, ii. 14, 297, a, 6 sqq.) from the form of its shadow on the moon during an eclipse, from the different stars visible in the north and the south, and the fact (already touched on 296, b, 18) that falling bodies do not move in parallel lines but only at similar angles towards the earth. With regard to the last, there is room for doubt whether it had been ascertained by accurate observation and experiment, or whether it was not an inference from the theory that all bodies which have weight gravitate towards the centre.

[2] In proof of this statement Aristotle, *Meteor.* i. 3, 339, b, 6, 340, a, 6, refers generally to the ἀστρολογικὰ θεωρήματα, *De Cœlo*; as above. 297, b, 30 sqq., he adduces the fact that when we move even a short distance north or south, some of the stars visible over the horizon seem to change their positions. He remarks here that mathematicians reckon the circumference of the earth at 400,000 stadia (50,000 miles: about double, therefore, the true measurement), and that as compared with the size of the celestial bodies this is a comparatively small figure. The hypothesis (so important in later times for Columbus's discovery)

from the nature of its material,[1] and partly from its position in the universe:[2] observation, moreover, assures us of the fact.[3] The hollows on the surface of the earth are filled with water, the upper surface of which is spherical.[4] Around the water and the earth are hollow spheres—first of air, then of fire. Aristotle, however, not unfrequently identifies the two last, remarking that what we call air is composed partly of moist and partly of dry vapour, the latter produced from earth, the former from water and the moisture of the earth: the drier kinds mount upwards, the more humid, from their

that the Indian and Atlantic Oceans are all one sea, he further thinks worthy of respect. *De An.* iii. 3, 428, b, 3, *Meteor.* i. 8, 345, b, 2, he tells us that the sun is larger than the earth.

[1] *De Cœlo*, ii. 14, where Aristotle opposes the view that the earth moves, both in the form in which it was held by Philolaus (ZELL. *Ph. d. Gr.* i. 388), and in the form given to it by Hicetas, Ecphantus, Heraclides (*ibid.* i. 459, ii. 1, 887 sq.), and attributed also to Plato (*ibid.* ii. 1, 682, 2). His chief reason is (296, a, 27, b, 6, 25) that circular motion is contrary to the elemental nature of the earth, in virtue of which its proper motion is rectilinear and toward the centre. For the same reason all other motions must be denied of it. For since its natural motion is toward the centre, and all bodies rest when they arrive at the place toward which they naturally gravitate, motion away from the centre cannot belong to any part of it and the whole must be at rest.

[2] The rotation of the world presupposes a fixed centre, which Aristotle conceives of as corporeal; see p. 480, *supra*.

[3] Thus, heavy bodies when thrown upwards in a straight line return to their starting-point (*ibid.* 296, b, 25 sqq.). Moreover, astronomical phenomena find a satisfactory explanation on the hypothesis that the earth rests (297, a, 2), while on the opposite hypothesis irregularities must result; for instance, the stars could not always rise and set at the same points (296, a, 34 sqq.). The 'motion' referred to in *Anal. Post.* ii. 1, 89, b, 30, is the earthquake.

[4] The proof of this, *De Cœlo*, ii. 4, 287, b, 1 sqq., is as follows: as water always accumulates in the deepest parts, and the nearer the centre the deeper any part is, water must continue to flow towards the centre until all the deep places are filled up, *i.e.* until its surface is at all points equidistant from the centre. The proper place for water is the space occupied by the sea, *Meteor.* ii. 2, 355, a, 35, b, 15, 356, a, 33.

greater gravity, sink downward; so the former fill the upper, the latter the lower, region of the atmosphere.[1]

The spherical form of the lower world involves that of the celestial region which surrounds the former and touches it at all points.[2] But considered in themselves, the heavens could scarcely be supposed to have another shape,[3] since the sphere is the first and most perfect figure, and therefore the one appropriate to the first body. Moreover, it is only this figure which can revolve within the space which it encloses,[4] and external to the heavens there is no space. Lastly, the motion of the heavens, being the measure of all movement, must be the most rapid; but the most rapid is that which has the shortest journey, and a circle is the shortest road from the same point to the same point.[5]

[1] *Meteor.* i. 3, 340, b, 19 sqq. 341, a, 2, c. 4, 341, b, 6–22; cf. i. 7, 344, b, 8, c. 8, 345, b, 32; ii. 2, 354, b, 4 sqq.; *De Cœlo*, ii. 4, 287, a, 30; on the difference between dry and moist vapours (ἀναθυμίασις, or καπνὸς and ἀτμὶς), *v.* also *Meteor.* ii. 4, 359, b, 28, 360, a, 31, iii. 6. 378, a, 18.

[2] *De Cœlo*, ii. 4, 287, a, 30 sqq. As there can be no space which is void (see pp. 432 sq.), it follows that the celestial and the fiery spheres are at all points in contact with one another.

[3] For what follows see *De Cœlo*, ii. 4.

[4] *Ibid.* 287, a, 11. This statement is certainly strange, for as ALEX. *apud* SIMPL. *in loco*, *Schol.* 493, b, 22, observed at an early date, a whole series of figures share this attribute with the sphere, viz. all those which are described by the spinning of a smooth body, and of which, therefore, each section which cuts the axis at right angles forms a circle whose centre is on the line of the axis. Simplicius gets out of the difficulty by remarking that, while in the case of other shapes there is only one axis that will serve the purpose, in a sphere you may take any you please; an explanation with which we may rest content on so trifling a point.

[5] Or as SIMPLICIUS, *in loco*, explains it: of all lines which return to the point from which they started, and thus inclose a space, the circle is the shortest; just as of all surfaces of equal extent that which is circular, of all bodies of equal bulk that which is globular, has the smallest circumference. Even with this

very unequal lengths in the opposite direction, *i.e.* from west to east, around the earth. That these bodies could move freely in space was a thought beyond the reach of ancient astronomers. They fancied each star fixed in its sphere, and therefore were obliged to imagine at least as many celestial spheres as they saw stars differing in their movements and periods.[1] Aristotle does not get beyond this view. The stars, he says,[2] as well as the whole heaven, appear to move; and since the earth is fixed, this phenomenon must be explained by a real movement of the heaven or the stars, or of both. It is not conceivable that both should

[1] Many of the older philosophers held that the stars were carried round by the air or the rotation of the world. Besides Xenophanes and Heraclitus, who held that the stars were nebulous masses, this view was shared by Anaxagoras, Democritus, and perhaps even Anaximenes; Empedocles held that it was true of the planets but not of the fixed stars, which were set immovably in the arch of heaven (see ZELL. *Ph. d. Gr.* i. 226 sq. 500, 622, 715, 799, 898, 3). Anaximander seems to have been the first to start the theory of spheres (*ibid.* 206 sq.) which was subsequently adopted by the Pythagoreans (*ibid.* 384, 1, 449) and by Parmenides (*ibid.* 528). Plato adopted it from the Pythagoreans (*ibid.* i. 685), and was followed by Eudoxus and Callippus, the leading astronomers of Aristotle's time (see p. 497 sq., *infra*). It seemed forced upon them by the difficulty they had in conceiving of a free motion of the stars, the idea of universal gravitation not yet having dawned upon them. It seemed, moreover, to be demanded by the nature of the stellar motions themselves, which, if they were one and the same every day round the earth, were more naturally explained by a single motion of the whole sphere of the fixed stars than by a number of separate motions. A like hypothesis seemed to afford the best explanation of the movements of the planets, including the sun and moon; their proper motion being the result of the rotation of their spheres, which takes place, however, in a direction opposite to that of the fixed stars, while their daily course was to be explained on the ground that the rotation of the stellar regions included them also.

[2] *De Cœlo*, ii. 8. This argument is stated with some fullness, because it shows the important fact that Aristotle already presupposes the existence of *different* stellar spheres.

move independently, for in this case how could we explain the exact correspondence between the rate at which the stars move and that of their spheres? We cannot refer an invariably regular phenomenon to an accidental coincidence. The same may be said about the hypothesis that the stars move while their spheres are fixed. In this case also the rate of the astral movement would have to correspond to the size of their circle, although there is no real connection between the two. Hence we are driven to suppose that the spheres move, but the stars are fixed and carried round by them.[1] This hypothesis satisfactorily explains why, among concentric circles, the larger move at a more rapid rate. It is further seen to be necessary because the stars, from their spherical shape,[2] in order to get into motion, must either roll or spin. Mere rolling, however, would not carry them on their way;[3] and the fact that the moon always shows us the same side proves that they do not spin. Moreover, their shape is the least adapted to progressive movement, since they are devoid of locomotive organs,[4] obviously because nature has not intended them for any such movement.[5]

[1] Τοὺς μὲν κύκλους κινεῖσθαι τὰ δὲ ἄστρα ἠμερεῖν [*i.e.* they have no motion of their own within their own spheres, but move with them] καὶ ἐνδεδεμένα τοῖς κύκλοις φέρεσθαι, 289, b, 32.

[2] That this is their form is demonstrated, *ibid.* c. 11, both by the shape of the moon in its different phases, and by the teleological argument that since nature does nothing in vain she must have given the stars, which require no organs of locomotion, the corresponding shape, viz. rotundity.

[3] Moreover, Aristotle adds, it is only the sun which appears to roll at its rising and setting: and this, like the twinkling light of the fixed stars, is merely an optical delusion.

[4] Cf. also ZELL. *Ph. d. Gr* i. 681, 1.

[5] In his refutation of the doctrine of the harmony of the spheres (c. 9 *fin.*), which we

Now in order to explain the motion of the heavenly bodies upon this hypothesis, it was assumed that every sphere revolved on its own axis at a perfectly uniform rate. Accordingly, so far as the movements of the separate stars varied from a perfect circle, or progressed at unequal rates, they were regarded as composite movements capable of being analysed into pure and uniform rotations. Therefore, each star required as many spheres as were found necessary for the resolution of its apparent movement into pure circular revolutions. Aristotle was bound to accept these various hypotheses, since even he never doubted that the heavenly spheres and the matter which composed them performed such revolutions only as our eyesight seems to witness to; moreover, he was obliged to suppose that the spheres contained within the universal globe, in which there was no vacuum whatever, had no room for any other kind of movement.[1] He went further, and connected

may omit, Aristotle gives another reason, viz. that infinite confusion would result if the movements of the stars were free.

[1] Cf. what has already been said upon the movement of the heavens, p. 489, and on the circular movement of the primeval body, p. 473. It was a universal presupposition among ancient astronomers, traceable to Plato (see p. 490, n, *supra*, and the references to Eudoxus and Callippus, p. 500 sq. *infra*), that the movement of the spheres must be perfectly uniform. Aristotle endeavours to establish its truth in the first instance in connection with the *πρῶτος οὐρανὸς*, the sphere of the fixed stars. Increase and decrease of velocity is possible only, he asserts, in a movement which has beginning, middle, and end; it is impossible in circular motion, which is alike without beginning and end. Unequal motion presupposes change either in *motum* or *movens*, or both, but this is impossible with regard to the heavens. For it is obvious to the senses that the parts of the (highest) heavens are uniform in their movements, while with regard to the heavens as a whole the same conclusion is forced upon us when we consider that unequal motion is only possible where force is either added or withdrawn, and that every with-

his peculiar theory of motion with these views. All motion depends upon the contact of a mobile with a motive body, and this law must apply to the motion of the spheres, since one *movens* in the same matter can only produce one kind of motion,[1] and since every motion ultimately proceeds from an unmoved cause, and every motion which has no beginning from an eternal cause of movement,[2] we must imagine as many eternal and unmoved substances for the production of the movement of the spheres as there are spheres required for the phenomena to be accounted for.[3] The heavenly bodies are no dead masses, but living beings;[4] there

drawal of force (ἀδυναμία) is an unnatural condition inapplicable to the heavens, &c. All these reasons hold equally of the spheres of the planets considered individually and apart from the influence of their spheres upon one another as of the first heaven. Aristotle, at 288, a, 14 of the passage quoted above, confines himself to the latter only. The movements of the lower spheres are compounded of those of the higher. The true account of the motions of the planets (attributing to them acceleration and retardation of velocity) is declared to be παντελῶς ἄλογον καὶ πλάσματι ὅμοιον, 289, a, 4.

[1] *Phys.* viii. 6, 259, a, 18 (*v.* above p. 293, n. 1): μία δ' [ἡ κίνησις] εἰ ὑφ' ἑνός τε τοῦ κινοῦντος καὶ ἑνὸς τοῦ κινουμένου.

[2] Cf. p. 388 sq., and on the way in which motion is produced by the unmoved mover, p. 404.

[3] After showing the necessity of an eternal incorporeal cause of motion, *Metaph.* xii. 7, Aristotle asks, c. 8: πότερον μίαν θετέον τὴν τοιαύτην οὐσίαν ἢ πλείους, καὶ πόσας; and answers, 1073, a, 26: ἐπεὶ δὲ τὸ κινούμενον ἀνάγκη ὑπό τινος κινεῖσθαι, καὶ τὸ πρῶτον κινοῦν ἀκίνητον εἶναι καθ' αὑτὸ, καὶ τὴν ἀΐδιον κίνησιν ὑπὸ ἀϊδίου κινεῖσθαι καὶ τὴν μίαν ὑφ' ἑνὸς, ὁρῶμεν δὲ παρὰ τὴν τοῦ παντὸς τὴν ἁπλῆν φορὰν ἣν κινεῖν φαμὲν τὴν πρώτην οὐσίαν καὶ ἀκίνητον, ἄλλας φορὰς οὔσας τὰς τῶν πλανήτων ἀϊδίους . . . ἀνάγκη καὶ τούτων ἑκάστην τῶν φορῶν ὑπ' ἀκινήτου τε κινεῖσθαι καθ' αὑτὸ καὶ ἀϊδίου οὐσίας. ἥ τε γὰρ τῶν ἄστρων φύσις ἀΐδιος οὐσία τις οὖσα, καὶ τὸ κινοῦν ἀΐδιον καὶ πρότερον τοῦ κινουμένου, καὶ τὸ πρότερον οὐσίας οὐσίαν ἀναγκαῖον εἶναι. φανερὸν τοίνυν ὅτι τοσαύτας τε οὐσίας ἀναγκαῖον εἶναι τήν τε φύσιν ἀϊδίους καὶ ἀκινήτους καθ' αὑτὰς καὶ ἄνευ μεγέθους. BRENTANO'S view that these eternal beings were created by God has already been discussed at p. 412, *supra*.

[4] *De Cœlo*, ii. 12, 292, a, 18 (cf. b, 1): ἀλλ' ἡμεῖς ὡς περὶ σωμάτων αὐτῶν μόνον καὶ μονάδων τάξιν

must be as many 'souls,' to preside over their motions, as there are spheres. The fabric of the heavens consists, therefore, of a system of concentric hollow balls or spheres, so placed within each other as to leave no empty interspace.[1] The centre of this system is called the bottom, the circumference the top; and so the outer spheres are uppermost, the inner are nethermost, and each locality in space is higher or lower according as it has a greater or less distance from the centre.[2] It is only indirectly, and relatively to the motion of the

*μὲν ἐχόντων ἀψύχων δὲ πάμπαν διανοούμεθα· δεῖ δ' ὡς μετεχόντων ὑπολαμβάνειν πράξεως καὶ ζωῆς.* It is true that *αὐτῶν* seems to refer to the stars, not to their spheres, and that we are at liberty to picture with KAMPE (*Erkenntnissth. d. Arist.* 39 sq.) each individual star as animated by a spirit; but the passage does not compel us to do so, for if the spheres are animate the stars which are part of them must share their life and action. Elsewhere, however, *Metaph.* xii. 8 (see p. 501 sq. *infra*, and cf. previous note), he expressly says that there cannot be more eternal unmoved beings than there are spheres, and this is only what we should have expected from him, since it is only from the movement of the stars that he infers, in the way indicated in the preceding note, the existence of such beings. Moreover, it is only the spheres, and not the stars, which are said by him to be moved. It is only these, then, that have 'souls' of their own, or, to speak more strictly, it is only these which are united severally to spiritual beings which stand in the same relation to them as the human soul does to the body which it moves without being itself moved (see *infra*, vol. ii., *init.*). *De Cælo*, ii. 2, 285, a, 29: *ὁ δ' οὐρανὸς ἔμψυχος καὶ ἔχει κινήσεως ἀρχήν.* So 284, b, 32; cf. *Part. An.* i. 1, 641, b, 15 sqq. As, however, the mover of the highest sphere lies outside the world and is unmoved, Plato's conception of the 'world-soul' (which, indeed, Aristotle expressly rejects, see p. 459, n. 5) is as inapplicable to it in its relation to its sphere as it is to the other spheral spirits in their relation to theirs.

[1] Aristotle denies that there is any 'void' (see p 433, sq. *supra*), and accordingly conceives not only of the astral spheres but of all the others, even the lowest, as in immediate contact with one another. *Meteor.* i. 3, 340, b, 10 sqq. 341, a, 2 sqq.; *De Cælo*, ii. 4, 287, a, 5 sqq.

[2] Cf. pp. 473 and 478, *supra*; *Phys.* iii. 5, 205, b, 30 sqq.; *De Cælo*, i. 6 *init.* ii. 4, 287, a, 8, and elsewhere.

spheres, that the terms above and beneath are applied to opposite points in the circumference, and consequently that we come to speak of right and left, front and back, in the world. In this case, reckoning from the sphere of the fixed stars, we call the southern half of the globe the upper, reckoning from the planetary sphere, the northern.[1] Each sphere has its own peculiar

[1] See *De Cœlo*, ii. 2 (cf. *Phys.* passage just referred to) and the lucid explanation in BÖCKH, *D. kosm. Syst. d. Platon*, p. 112 sqq. The differences here spoken of apply only to motion, and therefore properly only to that which is living and self-moved; to such the upper is (285, a, 23) τὸ ὅθεν ἡ κίνησις, the right hand τὸ ἀφ' οὗ, the front τὸ ἐφ' ὃ ἡ κίνησις. (Cf. *Ingr. An.* c. 4, 705, b, 13 sqq.) If we apply this to the world, that is the right side of the πρῶτος οὐρανὸς from which its motion proceeds—in other words, the east. This motion is conceived of (285, b, 19), as it was by Plato (see ZELL. *Ph. d. Gr.* i. 684, 1), as proceeding in a circle towards the right, as when in a circle of men anything (as, for instance, the cup or the talk at table, PLATO, *Symp.* 177, D, 214, B, C, 222, E, 223, C) is passed along by each to his neighbour on the right. The πρῶτος οὐρανὸς is therefore represented (285, a, 31 sqq.) as standing inside the circle of the heavens in the line of its axis, touching one of the poles with its head, the other with its feet, and as giving the ball at some point upon its equator the push with its right hand which sets it spinning. The natural direction of such motion will be that which carries the point in the periphery which has received the push past one who stands in the line of the axis in front of him: in other words, that which proceeds from the right in a forward direction and thence to the left. This, however, will be the case with the motion of the sphere of the fixed stars only if the head of one standing inside of it be upon the south pole; with that of the spheres of the planets which move from west to east, on the other hand, only on the opposite supposition. According to Aristotle, therefore, our antipodes are in the upper hemisphere, which he also calls (obviously from a different point of view than that just indicated) the right side of the world; we in the lower hemisphere and on the left side. On the other hand, reckoning from the courses of the planets, ours is the upper and right-hand, theirs the lower and left-hand, side. He points out, indeed, that we cannot properly speak of a right and a left at all in connection with the world as a whole (284, b, 6–18: ἐπειδὴ δέ τινές εἰσιν οἵ φασιν εἶναί τι δεξιὸν καὶ ἀριστερὸν τοῦ οὐρανοῦ . . . εἴπερ δεῖ προσάπτειν τῷ τοῦ παντὸς σώματι ταύτας τὰς ἀρχὰς

motion, communicated by the presiding incorporeal being: but in all cases the motion is uniform, without beginning or ending, round an axis; but the direction and the rapidity of this rotation vary in the several spheres. At the same time the spheres are connected with each other in such a way that the inner, or lower, are carried round by the outer, just as if the axis of each sphere were inserted at its poles into the next above.[1] Consequently, the problem arises how we are, under the

. . εἰ δὲ δεῖ καὶ τῷ οὐρανῷ προσάπτειν τι τῶν τοιούτων). Nevertheless, *Phys.* iii. 5, 205, b, 33, he says that the distinctions above and below, before and behind, right and left, exist οὐ μόνον πρὸς ἡμᾶς καὶ θέσει, ἀλλὰ καὶ ἐν αὐτῷ τῷ ὅλῳ; *Ingr. An.* 5, 706, b, 11, he finds it natural that motion should proceed from the upper front and right side, ἡ μὲν γὰρ ἀρχὴ τίμιον, τὸ δ' ἄνω τοῦ κάτω καὶ τὸ πρόσθεν τοῦ ὄπισθεν καὶ τὸ δεξιὸν τοῦ ἀριστεροῦ τιμιώτερον (though it might be said with equal truth, ὡς διὰ τὸ τὰς ἀρχὰς ἐν τούτοις εἶναι ταῦτα τιμιώτεοα τῶν ἀντικειμένων μορίων ἐστίν). So in *De Cœlo*, iii. 5, to the question why the heavens move from east to west and not in the contrary direction, he gives the answer that since nature orders everything in the most perfect possible way, and forward motion is superior to backward, the heavens have received that motion which, according to the description of right and left in c. 2, is to be regarded as a forward one. The allusion, *Meteor.* ii. 5, 362, a, 32 sqq., to the north pole as the upper, the south pole as the lower, is an unimportant use of ordinary language.

[1] A similar connection of the inner with the surrounding spheres Plato had conceived of as existing between the spheres of the planets and of the fixed stars, when in *Tim.* 36, C, 39, A (cf. *Ph. d. Gr.* i. 683), he represents the axis of the former as inserted in the latter, and accordingly attributes to the planets a spiral motion compounded of the motions of both circles. One would suppose from ARIST. *Metaph.* xii. 8, 1073, b, 18, 25, SIMPL. *De Cœlo*, *Schol. in Arist.* 498, b, 36, that Eudoxus and Callippus also conceived of the stars collectively as carried round by the sphere of the fixed stars, and the planets collectively by a sphere moving in the line of the ecliptic. It is clear, however, from the further explanations of Simplicius and from Aristotle's enumeration of the spheres (which differed from that of Callippus only in the addition of the σφαῖραι ἀνελίττουσαι) that this was not the case. Plato's proof that the spheres of the planets are carried round by the sphere of the fixed stars appeared to them fantastic. Only those spheres they conceived of as connected with one another which belonged

specified circumstances, to determine both the number of the spheres and also the direction and rapidity of their rotation, so as to explain the motions of the stars revealed to us by observation.[1]

For this purpose Eudoxus, the famous astronomer of Cnidos, who may be regarded as the first founder of a complete theory of the spheres based upon accurate observation,[2] sketched out a system of twenty-seven spheres, twenty-six of which belong to the planets. Considering the simple nature of its motion, he thought one sphere enough for the heaven of the fixed stars, and in this sphere the whole assemblage of the stars was fastened. On the other hand, he assigned four spheres to each of the five upper planets, and three apiece to the sun and moon, which, in agreement with Plato, he placed lowest in the planetary scale. The first sphere of each planet was intended to explain its daily revolution in concert with the heaven of the fixed stars, since it accomplished every day a rotation from east to

to the same planet. Aristotle, on the contrary, extended Plato's doctrine to the relation of all the upper spheres to those that are contained within them, as is clear from his hypothesis of retrogressive spheres (see *infra*). (Cf. also *De Cœlo*, ii. 12, 293, a, 5: πολλὰ σώματα κινοῦσιν αἱ πρὸ τῆς τελευταίας καὶ τῆς ἓν ἄστρον ἐχούσης· ἐν πολλαῖς γὰρ σφαίραις ἡ τελευταία σφαῖρα ἐνδεδεμένη φέρεται. *Ibid.* c. 10.) He justifies this view on the ground that the upper spheres stand to the lower as the form to the matter, *De Cœlo*, iv. 3, 4, 310, b, 14, 312, a, 12; *v. supra*, p. 325, n. 2); and that, as all spheres are in close and immediate contact with one another (see p. 496, n. 1, *supra*), each can communicate its motion to the one next below it. This relation need not apply with equal strictness to the elementary spheres as to the heavenly, seeing that they do not, like the latter, consist of a body whose nature it is to move in a circle. Aristotle, however, supposes in *Meteor.* i. 3, 341, a, 1, ii. 4, 361, a, 30 sqq. that the winds circle round the earth, being carried round by the rotation of the world.

[1] Cf. p. 490, n. 4, *supra*.

[2] Eudemus and Sosigenes in SIMPL. *De Cœlo, Schol. in Ar.* 498, a, 45, b, 47, cf. *supra*, p. 451, n. 2,

west. The second, which was fastened into it, revolved in the opposite direction, completing its course in the space of time required by each planet (in the sun's case 365¼ days) to traverse the zodiac in the plane of the ecliptic. The others, likewise carried round by the surrounding spheres, but differing from them in direction and the period of rotation, were meant to explain the variations which are observable between the apparent motion of the stars and that produced by the two first spheres. The lowest sphere of each planet supports the star itself.[1] Callippus[2] added seven other spheres—two apiece for the sun and moon, and one apiece for Mercury, Venus, and Mars.[3] Aristotle approves of this, as being the more probable theory,[4] without remarking

and IDELER on Eudoxus, *Philosoph. Abh. d. Berl. Akad.* 1830, p. 67 sq.

[1] For a fuller account of the theories of Eudoxus and Callippus, see besides the scanty allusion in Aristotle (*Metaph.* xii. 8, 1073, b, 17) SIMPL. *ibid.* 498, b, 5–500, a, 15, who depends partly upon the work of EUDOXUS Π. Ταχῶν, partly upon the account of Sosigenes, but has not altogether avoided falling into mistakes, and THEO. *Astronom.* p. 276 sqq. ed. Martin, in whom, however, his editor (p. 55 sq.) points out serious errors. In explanation, cf. IDELER, *ibid.* 73 sqq. KRISCHE, *Forschungen*, p. 288 sq., who are followed by BONITZ, *Arist. Metaph.* ii. 507 sq., and SCHWEGLER, *Arist. Metaph.* iv. 274 sq.; PRANTL, Ἀριστ. π. οὐρ. 303 sqq.

[2] According to SIMPL. *ibid.* 498, b, 28, 500, a, 23, this astronomer was a pupil of Eudoxus (or perhaps only of his pupil Polemarchus) who on the death of the latter betook himself to Aristotle at Athens. Simplicius knows of no work by him, but gives some account, taken from Eudemus's *History of Astronomy*, of the reasons which led him to dissent from Eudoxus.

[3] ARIST. *ibid.* 1073, b, 32; SIMPL. *ibid.* 500, a, 15 sqq.; THEO, *ibid.* 278 sq.; IDELER, 81 sq.; KRISCHE, 294 sq.

[4] It is obvious from the passage quoted p.490, n. 4, *supra*, that he did not attribute complete certainty to it. According to SIMPL. 503, a, 3, he even brought forward several objections to it in the *Problems*. The passage, however, does not occur in this treatise as we have it, which makes it all the more difficult to decide upon its genuineness.

that his own doctrine of the connection of the spheres in one coherent whole renders the first sphere assigned by Eudoxus and Callippus to each planet superfluous.[1] At the same time he judges an important rectification of the theory to be needful, on account of this very coherence of the heavenly system. For if each sphere carries round in its course all those which are contained in it, the motions of the lower planets must be greatly disturbed by those of their superiors, and the whole result of the assumed spheral system would be altered unless precautions be taken to neutralise the communication of movement from the spheres of one planet to those of another. To meet this difficulty Aristotle, accordingly, inserts some other spheres between the lowest of each planet and the highest of that which comes next beneath, meaning them to obviate the action of the first upon the second. But the premises of the whole theory require that these fresh spheres should move at the same rate as those which they are destined to neutralise, but in an exactly opposite direction;[2] and again that there should be as many

[1] For, as Simplicius also remarks, 503, a, 38 sqq. (where, however, l. 41, we must read *συναποκαθιστῶσαν*), a special sphere is not required to explain the daily rotation of the planets from east to west, since, in consequence of this connection the motion of the spheres of the fixed stars communicates itself to all that are contained in it.

[2] For if two concentric spheres, whose axes lie in the same line, and of which the inner one is fixed to the outer by the poles of its axis, spin round the common axis with relatively equal velocities in the opposite directions, each point of the inner sphere is at each moment precisely in the position in which it would be if both spheres were at rest. The two motions have completely neutralised one another in their effect upon the inner sphere and all that depends upon it, as Sosigenes, in SIMPL. *ibid.* 500, b, 39, truly explains.

retrogressive or retarding spheres[1] as the movements they are used to obviate. In other words, the collective motions peculiar to each planet have to be considered: none of these may be communicated to another planet, whereas the daily revolution from east to west excited in each planet by its first sphere does not require to be neutralised.[2] It is only the moon which requires no retrogressive sphere beneath the one which carries her, since there is no planet below the moon that she could interrupt. Aristotle, consequently, adds twenty-two retrogressive spheres to the thirty-three of Callippus, three apiece for Saturn and Jupiter, four apiece for

[1] Σφαῖραι ἀνελίττουσαι (supply τὰς τῶν ὑποκάτω φερομένων ἄστρων σφαίρας, not as Sosigenes does, SIMPL. *ib.* 502, a, 43, τὰς τῶν ὑπεράνω κινήσεις, 1074, a, 2–12), *i.e.* 'spheres which serve to turn those beneath them backwards,' to communicate to them a motion opposite to that of the next above them, and in this way to keep them in the same position relatively to the fixed stars as they would have held had the planetary spheres above them produced no effect upon them at all ("τὰς ἀνελιττούσας καὶ εἰς τὸ αὐτὸ ἀποκαθιστάσας τῇ θέσει τὴν πρώτην σφαῖραν ἀεὶ τοῦ ὑποκάτω τεταγμένου ἄστρου"); *Metaph. ibid.* 1074, a, 1 sqq Theophrastus called these spheres ἀντανaφέρουσαι, because they carry those that are beneath them back, and ἄναστροι, because not only some, but all of them are starless (SIMPL *ibid.* 498, b, 41, where, however, the retrogressive spheres appear to be confounded with the starless spheres of individual constellations); cf. *ibid.* 502, a, 40.

[2] This supposition is as erroneous as the view, discussed p. 501, *supra*, that the theory of a special sphere for each of the planets with daily rotation from east to west is compatible with Aristotle's system of the spheres. For since, according to his view, the sphere of the fixed stars in its revolution carries round with it all that is contained in it, each further sphere which revolved in the same direction and at the same velocity would only add one more to the number of the daily rotations of the spheres contained in it, unless this result were obviated by a special arrangement of retrogressive spheres. Aristotle has obviously overlooked this. If he had remarked it, he would not have neutralised the action of the primeval spheres of each planet which run parallel with the heaven of fixed stars, but would have abolished them altogether.

Mars, Venus, Mercury, and the sun; giving in all fifty-five or, if we add in the sphere of fixed stars, fifty-six spheres, together with as many eternal incorporeal unmoved entities from whom the motions of the spheres proceed.[1] The progress of observation could not fail to show that the theory of spheres, even as thus conceived, was inadequate to explain the phenomena: accordingly, as early as the middle of the third century before Christ, Apollonius of Perga advanced his theory of 'epicycles' triumphantly against it.[2] Yet even the antagonists of Aristotle's system admitted that his theory of retrogressive spheres was an ingenious attempt to rectify and supplement the hypothesis of Eudoxus.[3]

[1] *Metaph. ibid.* cf. SIMPL. *ibid.* 500, a, 34 sqq.; KRISCHE, *ibid.* 206 sqq.; IDELER, *ibid.* 82; BONITZ and SCHWEGLER on the passage in the *Metaphysics*. There Aristotle expressly says, l. 17 sqq., that more spheres are not required, for, since every motion exists for the sake of that which is moved, there can be no motion and therefore no sphere in the heavens which is not there for the sake of a star. *εἰ δὲ μηδεμίαν οἷόν τ' εἶναι φορὰν μὴ συντείνουσαν πρὸς ἄστρου φορὰν, ἔτι δὲ πᾶσαν φύσιν καὶ πᾶσαν οὐσίαν ἀπαθῆ καὶ καθ' αὑτὴν τοῦ ἀρίστου τετυχηκυῖαν τέλους εἶναι δεῖ νομίζειν, οὐδεμία ἂν εἴη παρὰ ταύτας ἑτέρα φύσις* [sc. *ἀπαθὴς* &c.], *ἀλλὰ τοῦτον ἀνάγκη τὸν ἀριθμὸν εἶναι τῶν οὐσιῶν. εἴτε γὰρ εἰσιν ἕτεραι κινοῖεν ἂν ὡς τέλος οὖσαι φορᾶς.* (Instead of *τέλους*, however, in l. 20, we must clearly read with Bonitz *τέλος*; BRENTANO's objection to this emendation, *Psychol. d. Ar.* 344 sq., is groundless; the traditional reading is obviously meaningless.) Here also we can see that his theory is founded upon observation. In l. 12 he remarks that if we were to leave the sun and the moon out of our reckoning, the number of the (planetary) spheres would be 47; but the difficulty is so obvious that Sosigenes conjectured this to be a slip for 49 (SIMPL. *ibid.* 502, a, 11 sqq.). Krische, with whom Bonitz and seemingly also Schwegler agree, refers the remark to the eight retrogressive spheres under Mercury and the sun; but it is not easy to see how the *σφαῖραι ἀνελίττουσαι* belonging to the sun and the moon could have been left out.

[2] Upon which cf. esp. IDELER, *ibid.* 83 sq., LÜBBERT, 'On the Greek Theory of the Moon's Orbit,' *Rhein. Mus.* xii. (1857), 120 sq.

[3] Of the Peripatetic Sosigenes (as to whom, see ZELL. *Ph. d. Gr.* i. 696, 701) SIMPL. says,

One circle of fixed stars, or the 'first heaven,' as Aristotle called it, is the most perfect portion of this celestial world. Stationed next to Deity, the best and most perfect object, it accomplishes its purpose by a single motion. In its single sphere it carries an innumerable multitude of heavenly bodies.[1] Its motion is pure, unalterable, uniform rotation,[2] starting from the better side and following the better direction, from right to right.[3] Moving without trouble, it requires no Atlas to support it nor any sail to carry it round by

*ibid.* 500, a, 40: ταῦτα τοίνυν τοῦ Ἀριστοτέλους συντόμως οὕτως καὶ σαφῶς εἰρηκότος, ὁ Σωσιγένης ἐγκωμιάσας τὴν ἀγχίνοιαν αὐτοῦ &c. SIMPL. proceeds, 502, b, 5 sqq., to give the arguments which he brought against Aristotle's theory.

[1] *De Cœlo*, ii. 12, Aristotle asks how it is that the number of motions belonging to each planet does not increase with their distance from the *primum movens*, but the three middle planets have one motion more than the two above and below them; and, further, why the first sphere contains so many stars while the converse is the case with the others, several spheres being assigned to each star. In reply to the former question (292, a, 22) he says that whereas the Most Perfect needs no action (see p. 396, n. 2, 3, and p. 397, n. 1), of all that is beneath Him one thing attains its end by a few actions, another requires many, others still make no effort to attain their end at all, but content themselves with a distant approach to perfection. The earth does not move at all, that which lies nearest to it has few motions, the next above that and the next again reach higher attainments, the former by the aid of many, the latter by the aid of few, motions. Finally the highest heavens attain the highest with one single motion. In answer to the second question, Aristotle remarks that the first sphere far excels the others in vital and original energy (νοῆσαι γὰρ δεῖ τῆς ζωῆς καὶ τῆς ἀρχῆς ἑκάστης πολλὴν ὑπεροχὴν εἶναι τῆς πρώτης πρὸς τὰς ἄλλας, 292, a, 28); but that the nearer each is to first the more are the bodies which it carries, seeing that the lower spheres are carried round by the upper. Aristotle himself seems, from the way in which he introduces them, 291, b, 24, 292, a, 14 (cf. p. 169, n. 3, and p. 490, n. 4) to place no great reliance upon these explanations. The problem, however, appears to him too important to be altogether passed over. There are questions which he approaches with a species of religious awe, but which nevertheless lie very near his heart.

[2] See p. 494, n. 1, *supra*.

[3] See p. 497, n. 1, *supra*.

force.[1] Its motion embraces all and generates all motion. Unbegotten and indestructible, affected by no earthly distress, comprehending in itself all time and space, it rejoices in the most complete existence that has been allowed to any bodily thing.[2] Less perfect is the region of the planetary spheres. Instead of one sphere bearing countless heavenly bodies, we here perceive a multiplicity of spheres, several of which are required to bear one star on its course. Their motion proceeds from the left side of the world, and though, considering each sphere by itself, it is a pure and uniform rotation, yet the general result is not so, since the lower spheres are carried round by the upper, and as a consequence motions composite and deviating

[1] See p. 459, n. 5.

[2] *De Cœlo*, ii. 1 *init.*: ἔστιν εἷς καὶ ἀΐδιος [ὁ πᾶς οὐρανὸς: Aristotle, however, has principally in view the πρῶτος οὐρανὸς, which, in i. 9, 278, b, 11, is called by preference simply οὐρανός] ἀρχὴν μὲν καὶ τελευτὴν οὐκ ἔχων τοῦ παντὸς αἰῶνος, ἔχων δὲ καὶ περιέχων ἐν αὐτῷ τὸν ἄπειρον χρόνον . . . διόπερ καλῶς ἔχει συμπείθειν ἑαυτὸν τοὺς ἀρχαίους καὶ μάλιστα πατρίους ἡμῶν ἀληθεῖς εἶναι λόγους, ὡς ἔστιν ἀθάνατόν τι καὶ θεῖον τῶν ἐχόντων μὲν κίνησιν ἐχόντων δὲ τοιαύτην ὥστε μηθὲν εἶναί πέρας αὐτῆς, ἀλλὰ μᾶλλον ταύτην τῶν ἄλλων πέρας. τό τε γὰρ πέρας τῶν περιεχόντων ἐστὶ, καὶ αὕτη ἡ κυκλοφορία τέλειος οὖσα περιέχει τὰς ἀτελεῖς καὶ τὰς ἐχούσας πέρας καὶ παῦλαν, αὐτὴ μὲν οὐδεμίαν οὔτ' ἀρχὴν ἔχουσα οὔτε τελευτὴν, ἀλλ' ἄπαυστος οὖσα τὸν ἄπειρον χρόνον, τῶν δ' ἄλλων τῶν μὲν αἰτία τῆς ἀρχῆς τῶν δὲ δεχομένη τὴν παῦλαν. The ancients were right when they assigned the heavens, as alone indestructible, to the gods, for it is ἄφθαρτος καὶ ἀγένητος, ἔτι δ' ἀπαθὴς πάσης θνητῆς δυσχερείας ἐστὶν, πρὸς δὲ τούτοις ἄπονος διὰ τὸ μηδεμιᾶς προσδεῖσθαι βιαίας ἀνάγκης, ἣ κατέχει κωλύουσα φέρεσθαι πεφυκότα αὐτὸν ἄλλως· πᾶν γὰρ τὸ τοιοῦτον ἐπίπονον, ὅσῳπερ ἂν ἀϊδιώτερον ᾖ, καὶ διαθέσεως τῆς ἀρίστης ἄμοιρον. I. 9, 279, a, 10: εἷς καὶ μόνος καὶ τέλειος οὗτος οὐρανός ἐστιν. The passage which follows (quoted p. 395, n. 6), refers partly to the same subject, even although the description contained in it refers primarily to God and not to the heavens. All that was said of the æther, p. 473 sq., is equally applicable to the πρῶτος οὐρανὸς, which, according to the account p. 490, n. 3, is formed of the purest æther.

from the circle are produced.[1] Moreover the rate of these motions is affected by the relation of the lower to the upper spheres,[2] which in itself is a further proof of their less complete self-sufficingness. Nevertheless, these spheres belong to the most divine part of the visible universe, to that which is removed from mutability and impression from without, and which partakes of perfection.[3] As the æther is superior to the four elements, so the stars without exception occupy a position of superiority to the earth. They form the celestial world, in comparison with which the terrestrial seems but an unimportant and transient portion of the whole.[4]

[1] Cf. p. 494 sqq. *supra*.

[2] *De Cœlo*, ii. 10: the velocity of the planets (by which, however, Aristotle, as PLATO, *Tim.* 39, A sq., *Rep.* x. 617, A, *Laws*, vii. 822, A sq., here means, not their absolute velocity, but merely the time of their revolutions, and accordingly calls those swifter which take a shorter time; on the other hand, see c. 7, 289, b, 15 sqq., *Meteor.* i. 3, 341, a, 21 sqq.) is in inverse ratio to their distance from the earth. The further each is the longer it takes to complete a revolution, inasmuch as the motion of the stellar heavens from east to west has a stronger counteractive influence upon that of the planets from west to east the nearer it is to it. As Aristotle expressly appeals to mathematical proofs for the truth of the latter proposition, we must understand it to mean that of concentric circles or spheres which revolve round their axes in the same time, the outer ones move swifter than the inner, and that therefore the velocity of their motion (in the present case that of the daily motion round the earth) constantly decreases towards the centre.

[3] Cf. pp. 474 and 505, n 2, *supra*, and *Phys.* ii. 4, 196, a, 33: τὸν οὐρανὸν καὶ τὰ θειότατα τῶν φαινομένων. *Metaph.* xii. 8, 1074, a, 17 (see p. 503, n. 1, *supra*). The stars are therefore called θεῖα σώματα, *Metaph. ibid.* l. 30, *De Cœlo*, ii. 12, 292, b, 32; likewise the heavens, *ibid.* 3, 286, a, 11.

[4] *Part. An.* i. 1, 641, b, 18: τὸ γοῦν τεταγμένον καὶ τὸ ὡρισμένον πολὺ μᾶλλον φαίνεται ἐν τοῖς οὐρανίοις ἢ περὶ ἡμᾶς τὸ δ' ἄλλοτ' ἄλλως καὶ ὡς ἔτυχε περὶ τὰ θνητὰ μᾶλλον. *Metaph.* iv. 5, 1010, a, 28: ὁ γὰρ περὶ ἡμᾶς τοῦ αἰσθητοῦ τόπος ἐν φθορᾷ καὶ γενέσει διατελεῖ μόνος ὤν· ἀλλ' οὗτος οὐθὲν ὡς εἰπεῖν μόριον τοῦ παντός ἐστιν. By thus dividing the universe into a terrestrial and a celestial part, Aristotle intends to distinguish between the sublunary world, the materials of which are

Aristotle, like Plato, thought the stars were bodies animated by rational spirits, and ascribed to these beings a nature far more godlike than man's.[1] Therefore he attributes a priceless value to the smallest iota of knowledge which we can boast to have acquired about them.[2] In this view we can trace the consequences of a metaphysic which deduced all motion ultimately from incorporeal essences; but it is also possible to recognise in it a reflection of those modes of

supplied by the four elements, and in which birth, death, and qualitative change take place, and the world of the heavenly spheres, which consists of ætherial matter and which, while exhibiting motion in space, admits neither growth nor transformation of any kind. Similarly, *De Cælo*, i. 2, 269, a, 30, b, 14: πέφυκέ τις οὐσία σώματος ἄλλη παρὰ τὰς ἐνταῦθα συστάσεις, θειοτέρα καὶ προτέρα τούτων ἁπάντων .... ἔστι τι παρὰ τὰ σώματα τὰ δεῦρο καὶ περὶ ἡμᾶς ἕτερον κεχωρισμένον τοσούτῳ τιμιωτέραν ἔχον τὴν φύσιν ὅσῳπερ ἀφέστηκε τῶν ἐνταῦθα πλεῖον; c. 8, 276, a, 28 sqq. b, 3, ii. 12, 292, b, 1, where τῶν ἄστρων and ἐνταῦθα are opposed; *Meteor*. ii. 3, 358, a, 25: τοῦτ' ἀεὶ γίνεσθαι κατά τινα τάξιν, ὡς ἐνδέχεται μετέχειν τὰ ἐνταῦθα τάξεως. In ordinary language ἐνταῦθα and ἐκεῖ indicate respectively the upper and the under world (*e.g.* SOPH. *Ajax*, 1372; PLATO, *Rep*. i. 330, D, v. 451, B; *Apol*. 40, E, 41, B sq., and elsewhere), in Plato also the sensible and ideal world (*Theæt*. 176, A, *Phædr*. 250, A), as also in Aristotle, where he is describing the Platonic doctrine, *Metaph*. i. 9, 990, b, 34, 991, b, 13, iii. 6, 1002, b, 15, 17, 22, 467.

[1] *Eth. N.* vi. 7, 1141, a, 34: ἀνθρώπου πολὺ θειότερα τὴν φύσιν, οἷον φανερώτατά γε ἐξ ὧν ὁ κόσμος συνέστηκεν. *De Cælo*, i. 2; see preceding note.

[2] *Part. An.* i. 5 *init.*: the beings in the world are either unbegotten and imperishable, or begotten and perishable: συμβέβηκε δὲ περὶ μὲν ἐκείνας τιμίας οὔσας καὶ θείας ἐλάττους ἡμῖν ὑπάρχειν θεωρίας ... περὶ δὲ τῶν φθαρτῶν φυτῶν τε καὶ ζῴων εὐποροῦμεν μᾶλλον πρὸς τὴν γνῶσιν διὰ τὸ σύντροφον. ἔχει δ' ἑκάτερα χάριν. τῶν μὲν γὰρ εἰ καὶ κατὰ μικρὸν ἐφαπτόμεθα, ὅμως διὰ τὴν τιμιότητα τοῦ γνωρίζειν ἥδιον ἢ τὰ παρ' ἡμῖν ἅπαντα, ὥσπερ καὶ τῶν ἐρωμένων τὸ τυχὸν καὶ μικρὸν μόριον κατιδεῖν ἥδιόν ἐστιν ἢ πολλὰ ἕτερα καὶ μεγάλα δι' ἀκριβείας ἰδεῖν· τὰ δὲ διὰ τὸ μᾶλλον καὶ πλείω γνωρίζειν αὐτῶν λαμβάνει τὴν τῆς ἐπιστήμης ὑπεροχήν, ἔτι δὲ διὰ τὸ πλησιαίτερα ἡμῶν εἶναι καὶ τῆς φύσεως οἰκειότερα ἀντικαταλλάττεταί τι πρὸς τὴν περὶ τὰ θεῖα φιλοσοφίαν. Cf. also *De Cælo*, ii. 12 (*supra*, p. 169, n. 3).

thought which lay at the root of the natural religion of the Greeks, and which stamped themselves in similar notions upon the philosophy of Plato.[1] Aristotle himself, indeed, is perfectly conscious of this connection between his theories and the ancient faith of his nation.[2]

The relation between the terrestrial world and the celestial spheres gives rise to the motions and change of earthly things. The laws that govern the earth are necessarily different from those of heaven,[3] because of the difference of materials, if for no other reason. The nature of the elements forces them to move in opposite directions and to exhibit opposite qualities, to act and be acted upon, to pass into and to intermingle with one another.[4] But since everything that is moved must be moved by something else, it follows that the reciprocal interaction of the elements receives

[1] ZELL. *Ph. d. Gr.* i. p. 686 sq.

[2] See p. 505, n. 2, *supra*, and p. 475, *supra*. *Metaph.* xii. 8, 1074, a, 38: παραδέδοται δὲ παρὰ τῶν ἀρχαίων καὶ παμπαλαίων ἐν μύθου σχήματι καταλελειμμένα τοῖς ὕστερον ὅτι θεοί τέ εἰσιν οὗτοι [the starry heavens] καὶ περιέχει τὸ θεῖον τὴν ὅλην φύσιν. τὰ δὲ λοιπὰ μυθικῶς ἤδη προσῆκται πρὸς τὴν πειθὼ τῶν πολλῶν καὶ πρὸς τὴν εἰς τοὺς νόμους καὶ τὸ συμφέρον χρῆσιν· ἀνθρωποειδεῖς τε γὰρ τούτους καὶ τῶν ἄλλων ζῴων ὁμοίους τισὶ λέγουσι, καὶ τούτοις ἕτερα ἀκόλουθα καὶ παραπλήσια τοῖς εἰρημένοις· ὧν εἴ τις χωρίσας αὐτὸ λάβοι μόνον τὸ πρῶτον ὅτι θεοὺς ᾤοντο τὰς πρώτας οὐσίας εἶναι θείως ἂν εἰρῆσθαι νομίσειεν καὶ κατὰ τὸ εἰκὸς πολλάκις εὑρημένης εἰς τὸ δυνατὸν ἑκάστης καὶ τέχνης καὶ φιλοσοφίας καὶ πάλιν φθειρομένων καὶ ταύτας τὰς δόξας ἐκείνων οἷον λείψανα περισεσῶσθαι μέχρι τοῦ νῦν. ἡ μὲν οὖν πάτριος δόξα καὶ ἡ παρὰ τῶν πρώτων ἐπὶ τοσοῦτον ἡμῖν φανερὰ μόνον.

[3] Both Christian and heathen opponents (*e.g.* the Platonist ATTICUS, see EUSEB. *Præp. Ev.* xv. 5, 6; ATHENAG. *Supplic.* c. 22, S, 88 P; CLEMENS, *Strom.* v. 591, D; EUSEB. *ibid.* 5, 1; CHALCID. *in Tim.* c. 248 and elsewhere; cf. KRISCHE, *Forsch.* 347, 1) have distorted this to mean that the Divine Providence reaches only as far as the moon and does not extend to the earth. How far this representation agrees with the true Aristotelian doctrine may be gathered from what has been already said, at pp. 403, 410, and 421.

[4] See pp. 453 sq. 477 sq. *sup.*

an impulse from without. The immediate sources of these motions are the heavenly bodies.[1] Their movement occasions the changes of warmth and cold, which, in the opinion of Aristotle, are the most generally active forces in the elementary bodies.[2] Although the stars and their spheres are neither warm nor cold,[3] yet, by their movement, they generate light and heat in the stratum of air that lies nearest to them; as, indeed, all swiftly moving bodies warm and even set fire to surrounding substances by friction. This is particularly true of the place in which the sun is fastened, since it is neither so far off as the fixed stars,[4] nor yet

[1] *Meteor.* i. 2, 339, a, 21: ἔστι δ' ἐξ ἀνάγκης συνεχὴς πως οὗτος [ὁ περὶ τὴν γῆν κόσμος] ταῖς ἄνω φοραῖς, ὥστε πᾶσαν αὐτοῦ τὴν δύναμιν κυβερνᾶσθαι ἐκεῖθεν. . . . . ὥστε τῶν συμβαινόντων περὶ αὐτὸν πῦρ μὲν καὶ γῆν καὶ τὰ συγγενῆ τούτοις ὡς ἐν ὕλης εἴδει τῶν γιγνομένων αἴτια χρὴ νομίζειν, . . . τὸ δ' οὕτως αἴτιον ὡς ὅθεν ἡ τῆς κινήσεως ἀρχὴ τὴν τῶν ἀεὶ κινουμένων αἰτιατέον δύναμιν; c. 3, 340, a, 14.

[2] See p. 480, n. 3, *supra*.

[3] It is impossible that they should be, seeing that the æther, of which they consist, admits none of the opposites which constitute the qualities of the elements. Some further reasons against the view that they are of a fiery nature are given, *Meteor.* i. 3 *fin.*

[4] *De Cœlo*, ii. 7, 289, a, 19: the stars do not consist of fire. ἡ δὲ θερμότης ἀπ' αὐτῶν καὶ τὸ φῶς γίνεται παρεκτριβομένου τοῦ ἀέρος ὑπὸ τῆς ἐκείνων φορᾶς. Motion causes wood, stone, and iron to burn, and the lead of arrows and bullets to melt (on this widely spread error of the ancients, cf. IDELER, *Arist. Meteor.* i. 359 sq.); it must therefore heat the air that surrounds them. ταῦτα μὲν οὖν αὐτὰ ἐκθερμαίνεται διὰ τὸ ἐν ἀέρι φέρεσθαι, ὃς διὰ τὴν πληγὴν τῇ κινήσει γίγνεται πῦρ· τῶν δὲ ἄνω ἕκαστον ἐν τῇ σφαίρᾳ φέρεται, ὥστ' αὐτὰ μὲν μὴ ἐκπυροῦσθαι, τοῦ δ' ἀέρος ὑπὸ τὴν τοῦ κυκλικοῦ σώματος σφαῖραν ὄντος ἀνάγκη φερομένης ἐκείνης ἐκθερμαίνεσθαι, καὶ ταύτῃ μάλιστα ᾗ ὁ ἥλιος τετύχηκεν ἐνδεδεμένος. διὸ δὴ πλησιάζοντός τε αὐτοῦ καὶ ἀνίσχοντος καὶ ὑπὲρ ἡμᾶς ὄντος γίγνεται ἡ θερμότης. That the sun has this effect is explained, *Meteor.* i. 3, 341, a, 19, in the course of an exposition which agrees with the passage just quoted, in terms similar to the above. See further *Meteor.* i. 3, 340, b, 10, i. 7, 344, a, 8. The whole account, however, would suggest many difficulties even to an Aristotelian. For how can light and heat proceed from a

so slow of motion as the moon. Again the solar movement frequently causes the fire which has raised the air, to burst and rush violently downward.[1] If the motion of the sun were uniformly the same in relation to the earth it would produce a simple and unvarying effect either of generation or of destruction. But the inclination of the sun's path makes it unequal. The sun is sometimes nearer and sometimes further from the different parts of the earth, and the alternation of birth and death is a result of this circumstance.[2] Whether one connects the former with the proximity and the latter with the remoteness of the sun, the one with the approach of warmer and the other with that of colder seasons of the year,[3] or whether one regards generation as the consequence of a proportionate mixture of heat and cold, and destruction as produced by a prepon-

single celestial body like this, when it is the motion of the whole sphere that produces them? We should require in that case to suppose that the sun stands out of its sphere like a promontory. Or how does it agree with the account here given that the fire and air region is separated from the solar sphere by the lunar?

[1] *Meteor.* i. 3, 341 a, 28.

[2] *Gen. et Corr.* ii. 10: ἐπεὶ ἡ κατὰ τὴν φορὰν κίνησις δέδεικται ὅτι ἀΐδιος, ἀνάγκη τούτων ὄντων καὶ γένεσιν εἶναι συνεχῶς· ἡ γὰρ φορὰ ποιήσει τὴν γένεσιν ἐνδελεχῶς διὰ τὸ προσάγειν καὶ ἀπάγειν τὸ γεννητικόν. . . . But as both birth and death are eternal, φανερὸν ὅτι μιᾶς μὲν οὔσης τῆς φορᾶς οὐκ ἐνδέχεται γίνεσθαι ἄμφω διὰ τὸ ἐναντία εἶναι· τὸ γὰρ αὐτὸ καὶ ὡσαύτως ἔχον ἀεὶ τὸ αὐτὸ πέφυκε ποιεῖν. ὥστε ἤτοι γένεσις ἀεὶ ἔσται ἢ φθορά. δεῖ δὲ πλείους εἶναι τὰς κινήσεις καὶ ἐναντίας, ἢ τῇ φορᾷ ἢ τῇ ἀνωμαλίᾳ· τῶν γὰρ ἐναντίων τἀναντία αἴτια. διὸ καὶ οὐχ ἡ πρώτη φορὰ αἰτία ἐστὶ γενέσεως καὶ φθορᾶς, ἀλλ' ἡ κατὰ τὸν λοξὸν κύκλον· ἐν ταύτῃ γὰρ καὶ τὸ συνεχές ἐστι καὶ τὸ κινεῖσθαι δύο κινήσεις . . . τῆς μὲν οὖν συνεχείας ἡ τοῦ ὅλου φορὰ αἰτία, τοῦ δὲ προσιέναι καὶ ἀπιέναι ἡ ἔγκλισις· συμβαίνει γὰρ ὁτὲ μὲν πόρρω γίνεσθαι ὁτὲ δ' ἐγγύς. ἀνίσου δὲ τοῦ διαστήματος ὄντος ἀνώμαλος ἔσται ἡ κίνησις· ὥστ' εἰ τῷ προσιέναι καὶ ἐγγὺς εἶναι γεννᾷ, τῷ ἀπιέναι ταὐτὸν τοῦτο καὶ πόρρω γίνεσθαι φθείρει. καὶ εἰ τῷ πολλάκις προσιέναι γεννᾷ, καὶ τῷ πολλάκις ἀπελθεῖν φθείρει· τῶν γὰρ ἐναντίων τἀναντία αἴτια. Cf. *Meteor.* i. 9, 346, b, 20, ii. 2, 354, b, 26.

[3] As is done in the preceding note and in the passages quoted, p. 512, n. 1, *infra*.

derance of one over the other,[1] still the facts are the same. The double movement of the heavens occasions the interaction of the elements upon one another, and, by causing their mutual metamorphosis, prevents their flying to the different localities which, if prevented by no controlling influence, they would severally occupy. The materials of the world are thus continually conducted in a never-ceasing stream of reciprocal transmutation downwards from above and upwards from below.[2] The endlessness of this process communicates a sort of infinity to perishable things. The substances which are further removed from the highest cause having no right to indestructible existence, the Deity has endowed them with perpetual 'becoming' instead, and has thus left no gap or discontinuity in the universe.[3]

[1] *Gen. An.* iv. 10, 777, b, 16: the generation, evolution, and the life of animals have their natural periods, which are determined by the revolution of the sun and the moon, as we might expect: καὶ γὰρ θερμότητες καὶ ψύξεις μέχρι συμμετρίας τινὸς ποιοῦσι τὰς γενέσεις, μετὰ δὲ ταῦτα τὰς φθοράς. τούτων δ' ἔχουσι τὸ πέρας καὶ τῆς ἀρχῆς καὶ τῆς τελευτῆς αἱ τούτων κινήσεις τῶν ἄστρων. The changes in the temperature of the air depend upon the sun and moon; those in the water upon air and wind. Whatever is or comes into being in them must adjust itself to their state. (Then follows the passage quoted p. 363, n. 4.)

[2] *Gen. et Corr.* ii. 10, 337, a, 7: ἅμα δὲ δῆλον ἐκ τούτων ὅ τινες ἀποροῦσιν, διὰ τί ἑκάστου τῶν σωμάτων εἰς τὴν οἰκείαν φερομένου χώραν ἐν τῷ ἀπείρῳ χρόνῳ οὐ διεστᾶσι τὰ σώματα. αἴτιον γὰρ τούτου ἐστὶν ἡ εἰς ἄλληλα μετάβασις· εἰ γὰρ ἕκαστον ἔμενεν ἐν τῇ αὑτοῦ χώρᾳ καὶ μὴ μετέβαλλεν ὑπὸ τοῦ πλησίον, ἤδη ἂν διεστήκεσαν. μεταβάλλει οὖν διὰ τὴν φορὰν διπλῆν οὖσαν· διὰ δὲ τὸ μεταβάλλειν οὐκ ἐνδέχεται μένειν οὐδὲν αὐτῶν ἐν οὐδεμιᾷ χώρᾳ τεταγμένῃ. Here also it is only by variations of temperature that the sun effects the constant transmutation of the elements, as is placed beyond a doubt by the arguments in the *Meteorology* which are discussed below.

[3] *Gen. et Corr.* ii. 10, 336, b, 26: τοῦτο δ' εὐλόγως συμβέβηκεν· ἐπεὶ γὰρ ἐν ἅπασιν ἀεὶ τοῦ βελτίονος ὀρέγεσθαί φαμεν τὴν φύσιν, βέλτιον δὲ τὸ εἶναι ἢ τὸ μὴ εἶναι, . . . τοῦτο δ' ἀδύνατον ἐν ἅπασιν ὑπάρχειν διὰ τὸ πόρρω τῆς ἀρχῆς ἀφίστασθαι, τῷ λειπομένῳ τρόπῳ συνεπλήρωσε τὸ ὅλον ὁ θεὸς ἐντελεχῆ (better: ἐνδελ.) ποιήσας τὴν γένεσιν· οὕτω

Accordingly a higher order is mirrored in the law of this mutation: for as the heavenly bodies approach the earth and move away from it at fixed and equal intervals, nature has ordained that birth and death should occur coincidently with these periods;[1] and as the movement of the heavens is circular, the opposite motions of the elements in the terrestrial world also accomplish their kind of circle, inasmuch as each of them passes into all the others, and finally returns upon itself.[2]

Aristotle's *Meteorology* is occupied with the phenomena produced by the motion, reciprocal action and mixture of the elements.[3] He first[4] describes those which belong to the fiery circle; next[5] those of the lower portion of the atmosphere;[6] and finally[7] those

γὰρ ἂν μάλιστα συνείροιτο τὸ εἶναι [in this way no gap will be left in nature] διὰ τὸ ἐγγύτατα εἶναι τῆς οὐσίας τὸ γίνεσθαι ἀεὶ καὶ τὴν γένεσιν. *Ibid.* c. 11 *fin.*: perishable things complete the circle of their being ἀριθμῷ not εἴδει. Cf. also ZELL. *Ph. d. Gr.* i. p. 512.

[1] *Ibid.* at 336, b, 9: ἐν ἴσῳ χρόνῳ καὶ ἡ φθορὰ καὶ ἡ γένεσις ἡ κατὰ φύσιν. διὸ καὶ οἱ χρόνοι καὶ οἱ βίοι ἑκάστων ἀριθμὸν ἔχουσι καὶ τούτῳ διορίζονται· πάντων γάρ ἐστι τάξις καὶ πᾶς βίος καὶ χρόνος μετρεῖται περιόδῳ, πλὴν οὐ τῷ αὐτῷ πάντες. Experience, moreover, is in harmony with this theory: ὁρῶμεν γὰρ ὅτι προσιόντος μὲν τοῦ ἡλίου γένεσίς ἐστιν, ἀπιόντος δὲ φθίσις, καὶ ἐν ἴσῳ χρόνῳ ἑκάτερον. It is true that in many cases death takes place quicker. The reason of this, however, is to be found in the disproportionateness of the materials.

[2] *Ibid.* 337, a, 1, c, 11, 338, b, 3, 11 sqq.; cf. c. 4 (see p. 484, *supra*), and on the circle of generation, *Phys.* iv. 14, 223, b, 23 sqq.

[3] The object of the treatise is set forth thus, in c. 1: ὅσα συμβαίνει κατὰ φύσιν μέν, ἀτακτοτέραν μέντοι τῆς τοῦ πρώτου στοιχείου τῶν σωμάτων, περὶ τὸν γειτνιῶντα μάλιστα τόπον τῇ φορᾷ τῶν ἄστρων, . . . ὅσα τε θείημεν ἂν ἀέρος εἶναι κοινὰ πάθη καὶ ὕδατος, ἔτι δὲ γῆς ὅσα εἴδη καὶ μέρη καὶ πάθη τῶν μερῶν. With these investigations ought to be connected the discussion of organic being (*ibid.* and iv. 12 *fin.*).

[4] *Meteor.* i. 3–8.

[5] *Ibid.* i. 9—iii. 6.

[6] τόπος τῇ θέσει μὲν δεύτερος μετὰ τοῦτον [*i.e.* after the fiery circle], πρῶτος δὲ περὶ τὴν γῆν; and again: τόπος κοινὸς ὕδατός τε καὶ ἀέρος, i. 9 *init.*

[7] *Ibid.* iii. 6, 378, a, 15 sqq. according to BELCHER's reckoning, or iii. 7 according to that of IDELER.

which are exhibited within the sphere of the earth. The latter part of his treatise does not seem to have been finished. Aristotle appears, instead of continuing the work, to have composed the separate essay which now forms the fourth book of the *Meteorology* and which offers a proper point of transition to the science of animate existence in its discussion of topics which we should refer to the province of inorganic and organic chemistry.[1] In the first of these sections various phenomena, such as meteors and aerolites,[2] together with the Comets and the Galaxy, are explained to be collected masses of dry and inflammable vapours set on fire by the motion of the stars.[3] Comets are bodies of this vapour in a state of slow combustion, moving freely or in the train of a star.[4] Similar in kind is the Milky Way, its vaporous material being excreted and inflamed by the movement of the whole heaven.[5] In the lower portion of the atmosphere are observable all circumstances connected with the formation of the clouds. Under the influence of solar warmth the moisture on the surface of the earth evaporates. The rising mists cool themselves in the higher regions of the air, imparting a portion of their heat to the fiery

[1] See p. 83, n. 2, *supra*.

[2] *Meteor.* i. 4, 5.

[3] Cf. pp. 482, n. 4, 479, n. 4, 490, n. 3, and 509, n. 4.

[4] *Ibid.* c. 6–7, especially 344, a, 16 sqq. and c. 8, 345, b, 32 sqq. In harmony with the account of the nature of comets which he here gives, Aristotle endeavours (344, b, 18 sqq.) to explain those meteorological phenomena (*e.g.* storm and drought) which they were thought to forecast. On *Meteor.* i. 396 IDELER points out that Aristotle's account of comets held its ground among the most distinguished astronomers until the time of Newton.

[5] *Ibid.* c. 8, esp. 346, b, 6 sqq. where the attempt is made to explain in detail, on the basis of this supposition, the form and appearance of the Milky Way.

sphere, and losing the rest in contact with the chillness of the upper atmosphere.[1] Then they condense, change from air to water,[2] and fall again to earth. In this manner there is formed a stream of air and water, moving up and down in a circle: when the sun is near, the column of air, or warm exhalation, rises; when it retreats, the stream of water flows downwards.[3] Aristotle makes use of this phenomenon to explain the clouds and mists,[4] dew, rime, rain, snow and hail,[5] and goes on to connect with it the nature and origin of rivers[6] and of the sea.[7] The former are produced in part by the products of the atmosphere and in part by a transmutation of vapour into water within the earth. The sea, though no less eternal than the world, is always yielding a portion of its waters in the form of vapour, which returns to it through the rivers after having been again transformed into water in the atmosphere and discharged in this form. Its salt and bitter taste is occasioned by earthy particles which obtain their bitterness in combustion: for when dry vapours are generated in the earth, a change ensues from earth to fire—in other words, combustion. These vapours, then, carry the result of this combustion aloft with them, which mingles with the water of the rain and the streams, and being by reason of its weight unaffected by evaporation, it remains

[1] The reason of this is given, *ibid.* i. c. 3, 340, a, 26.

[2] Air, which is a compound of moisture and heat, when it cools down, is transformed into moisture and cold, *i.e.* water: see p. 484, *supra*.

[3] *Ibid.* i. c. 9.

[4] *Ibid.* at 346, b, 32.

[5] *Ibid.* c. 10–12.

[6] *Ibid.* c. 13, 349, b, 2–c. 14 *fin.*, where he gives a survey of the most noted rivers and their sources. The matter of c. 14 will be further touched upon *infra*.

[7] *Ibid.* ii. c. 1–3.

behind in the sea. Dry evaporation causes wind, as moist evaporation rain. Both are mingled in the lower atmosphere, but the dry exhalations rise aloft and are carried round by the rotation of the upper regions. This excretion of the warmer matter causes the remaining moisture to cool and be condensed into rain; and this refrigeration being communicated to the warm vapours of the upper strata, causes them to rush towards the earth in the shape of wind.[1] Consequently, the alternations of wind and rain depend upon the fluctuations of moist and dry vapours continually changing place with one another.[2] Masses of vapour penetrating the interior of the earth as winds produce earthquakes.[3] Similar in their origin are thunder and lightning, whirlwinds and simooms,[4] while halos round the sun and moon, rainbows, parhelia, and light-streaks in the clouds[5] may be explained by the reflection of light in moist exhalations and water. In the earth itself stones are produced from dry exhalations, together with all other minerals which are incapable of fusion; damp vapours, on the other hand, by hardening, before passing into water, become metals.[6]

At the end of the third book of the *Meteorology*

[1] *Ibid.* i. c. 13, 349, a, 12 sqq., ii. 4–6, especially c. 4, where the subject is further developed. Cf. also Ideler, i. 541 sqq.; *Meteor.* i. 3, 341, a, 1; *Probl.* xxvi. 26.

[2] Upon this ἀντιπερίστασις, a conception which plays a great part in Aristotle's philosophy of nature, as it did in Plato's before, and in the Stoics' after, him, see also *Meteor.* i. 12, 348, b, 2; *De Somno*, 3, 457, b, 2.

[3] *Meteor.* ii. 7, 8. An enumeration of the various hypotheses advanced by the ancients to explain earthquakes is given by Ideler, *in loco*, 582 sqq.

[4] *Ibid.* ii. 9, and iii. 1.

[5] These phenomena are dealt with in *Meteor.* iii., chapters 2–6.

[6] *Meteor.* iii. 6, 7, 378, a, 15 sqq.

Aristotle promises to give a fuller description of these bodies. But the fourth book, which is not properly connected with the others,[1] makes a new start. Taking the four elementary characteristics, and regarding warmth and cold as active, dryness and moisture as passive, principles,[2] Aristotle first considers the former and then the latter, in their several manifestations. From warmth and cold he derives generation on the one hand and corruption on the other[3]: generation, when these principles, being combined in due proportion and acting on the material substratum of a being, obtain complete ascendency over its substance[4]; corruption, when the warmth peculiar to the moist elements of a being is withdrawn by some external heat, and consequently form and distinctness are destroyed.[5]

Among phenomena of a similar description, but not involving generation or destruction, may be reckoned digestion, ripening, boiling, roasting, &c.[6] Of the two

[1] Cf. p. 513, *supra*.

[2] See p. 480, n. 3, *supra*.

[3] *Meteor.* iv. 1, 378, b, 28: πρῶτον μὲν οὖν καθόλου ἡ ἁπλῆ γένεσις καὶ ἡ φυσικὴ μεταβολὴ τούτων τῶν δυνάμεών ἐστιν ἔργον καὶ ἡ ἀντικειμένη φθορὰ κατὰ φύσιν.

[4] *Ibid.* l. 31: ἔστι δ' ἡ ἁπλῆ καὶ φυσικὴ γένεσις μεταβολὴ ὑπό τούτων τῶν δυνάμεων, ὅταν ἔχωσι λόγον, ἐκ τῆς ὑποκειμένης ὕλης ἑκάστῃ φύσει· αὗται δ' [ὕλη] εἰσὶν αἱ εἰρημέναι δυνάμεις παθητικα΄. γεννῶσι δὲ τὸ θερμὸν καὶ ψυχρὸν κρατοῦντα τῆς ὕλης.

[5] *Ibid.* 379, a, 2: ὅταν δὲ μὴ κρατῇ, κατὰ μέρος μὲν μώλυσις καὶ ἀπεψία γίνεται, τῇ δ' ἁπλῇ γενέσει ἐναντίον μάλιστα κοινὸν σῆψις. πᾶσα γὰρ ἡ κατὰ φύσιν φθορὰ εἰς τοῦθ' ὁδός ἐστιν. L. 16: σῆψις δ' ἐστὶ φθορὰ τῆς ἐν ἑκάστῳ ὑγρῷ οἰκείας καὶ κατὰ φύσιν θερμότητος ὑπ' ἀλλοτρίας θερμότητος· αὕτη δ' ἐστὶν ἡ τοῦ περιέχοντος. Corruption may also be described as the joint effect of ψυχρότης οἰκεία, and θερμότης ἀλλοτρία. Moisture, however, is (acc. to l. 8 sqq.) a necessary means, all generation being the result of the action of moisture (which is εὐόριστον; see p. 480, n. 2, *supra*) upon dryness in obedience to the efficient force of nature; destruction begins ὅταν κρατῇ τοῦ ὁρίζοντος τὸ ὁριζόμενον διὰ τὸ περιέχον.

[6] πέψις, πέπανσις, ἕψις, ὄπτησις

passive principles moisture and dryness, the former is in its nature the more easily determinable; moisture, therefore, must needs determine the characteristics of dryness and not *vice versa*; neither of the two, however, can exist without the other, but both (and therefore also the two elements, whose fundamental qualities they are) must subsist together in all bodies.[1] This combination produces the opposition of hard and soft.[2] Every body, again, which has its own definite form[3] must be stiff, and all stiffness is a form of dryness.[4] Consequently, we are next led to treat of the nature and kinds of drying, melting, and stiffening, together with the materials subject to these processes.[5] Homogeneous bodies are formed of earth and water by the influence of warmth and cold.[6] Aristotle proceeds at once

as effects of heat, ἀπεψία, ὠμότης, μώλυσις, στάτευσις as effects of cold. Cf. *Meteor.* iv. 2 sq.

[1] *Ibid.* c. 4: εἰσὶ δ' αἱ μὲν ἀρχαὶ τῶν σωμάτων αἱ παθητικαὶ ὑγρὸν καὶ ξηρόν . . . ἐπεὶ δ' ἐστὶ τὸ μὲν ὑγρὸν εὐόριστον, τὸ δὲ ξηρὸν δυσόριστον [see p. 480, n. 2, *supra*], ὅμοιόν τι τῷ ὄψῳ καὶ τοῖς ἡδύσμασι πρὸς ἄλληλα πάσχουσιν· τὸ γὰρ ὑγρὸν τῷ ξηρῷ αἴτιον τοῦ ὁρίζεσθαι . . . καὶ διὰ τοῦτο ἐξ ἀμφοῖν ἐστὶ τὸ ὡρισμένον σῶμα. λέγεται δὲ τῶν στοιχείων ἰδιαίτατα ξηροῦ μὲν γῆ, ὑγροῦ δὲ ὕδωρ [see p. 483, n. 2, *sup.*]. διὰ ταῦτα ἅπαντα τὰ ὡρισμένα σώματα ἐνταῦθα [added because the statement does not apply to ætherial regions] οὐκ ἄνευ γῆς καὶ ὕδατος.

[2] *Ibid.* 382, a, 8 sqq. c. 5 *init.*

[3] τὸ ὡρισμένον σῶμα οἰκείῳ ὅρῳ (cf. p. 480, n. 2), as distinguished from that which has its form imposed on it from without, as water in a vessel.

[4] *Ibid.* c. 5 *init.*

[5] *Ibid.* c. 5–7.

[6] *Ibid.* c. 8 *init.* c. 10, 388, a, 20 sqq. On the nature of homogeneity, cf. Part I, 879, 2. Homogeneous bodies (ὁμοιομερῆ) are defined in general as those composed of one kind of material, whether that material be simple and elementary or compound, in the narrower sense as those composed of the latter. Opposed to the homogeneous is the heterogeneous (ἀνομοιομερὲς), or that which is composed of different materials mechanically held together, as is the case especially with organic bodies. See, besides the passages referred to above, *Meteor.* iv. 10, 388, a, 13. c. 12 *init.*; *De An.* i. 5, 411, a, 16-21, cf. b, 24 sqq, where besides ὁμοιομερὴς we have ὁμοιειδής, which is further expanded into τὸ

to describe their qualities and composition,[1] passing to the detailed discussion of living beings with the remark that homogeneous bodies serve as the matter of heterogeneous ones, and that the designs of nature are more clearly exhibited in the latter than in the former.[2] In fact, however, everything which we find scattered over the later writings about the objects of sense-perception, light, colour, sound, smell, &c., belongs to that portion of physics which is treated of in the *Meteorology*. We cannot therefore here do more than refer to these suggestions,[3]

ὅλον τοῖς μορίοις ὁμοειδές, *Part. An.* ii. 9, 655, b, 21, where ὁμοιομερῆ is explained by συνώνυμα τοῖς ὅλοις τὰ μέρη; cf. the *Ind. Arist.* under the word. According to PHILOP. Aristotle distinguished in his *Eudemus* between elementary homogeneous and organic bodies. In a quotation from this dialogue occur the words (*Ar. Fr.* 1482, a, 10, cf. p. 482, *supra*): ἀσυμμετρία ἐστὶ τῶν στοιχείων ἡ νόσος . . . τῶν ὁμοιομερῶν ἡ ἀσθένεια . . . τῶν ὀργανικῶν τὸ αἶσχος; they are perhaps, however, only inserted by the reporter by way of explanation.

[1] *Ibid.* c. 8–11. Caps. 8 and 9 treat especially of stiffening by heat and cold; of melting by heat and moisture; of softening, bending, extending; of breaking, bruising, splitting, &c.; caps. 10 and 11 treat of the constituent elements of homogeneous bodies and the properties by which they may be known. For a fuller account of Aristotle's treatment of the latter subject see MEYER, *Arist. Thierkunde*, 416 sqq. 477.

[2] *Ibid.* c. 12.

[3] Aristotle gives the following account of Light, *De An.* ii. 7, 418, b, 3 sqq.; *De Sensu*, c. 3, 439, a, 18 sqq.: transparency is a common property (κοινὴ φύσις καὶ δύναμις) of many bodies with whose other properties it is inseparably united (οὐ χωριστή). That which gives actuality to this property (ἡ τούτου ἐνέργεια τοῦ διαφανοῦς ᾗ διαφανὲς—ἡ ἐντελέχεια τοῦ διαφανοῦς, 418, b, 9, 419, a, 10) and as it were colour to the transparent object is light, which again is caused by fire or æther (ὑπὸ πυρὸς ἢ τοιούτου οἷον τὸ ἄνω σῶμα), and may therefore be defined as πυρὸς ἢ τοιούτου τινὸς παρουσία ἐν τῷ διαφανεῖ. At the same time he controverts (*De An.* 418, b, 20; *De Sensu*, c. 6, 446, a, 25 sqq.) the view of Empedocles that light is motion passing from heaven to earth, on the ground of the immense distance at which we see it. Light, to Aristotle, is the effect of motion (see 468 sq. *supra*), but is not *per se* a motion, but rather a definite state which is produced in a body as a whole in consequence of a qualitative change (ἀλλοίωσις) such as freezing (*De Sensu*, c. 6, 446, b, 27 sqq.) It is asserted at the same time that vision is the

as it will be now necessary to pass at once, in the next volume, to Aristotle's observations and conclusions as to Organic Nature.

result of a motion which passes from an object to the eye through the transparent medium (*De An.* ii. 7, 419, a, 9, 13, iii. 1, 424, b, 29. c. 12, 435, a, 5; *De Sensu*, 2, 438, b, 3).—That, he says, which by its presence causes light, by its absence darkness, is also that which on the border of transparent things produces Colour. For colour resides only on the surface of bodies, and belongs, therefore, only to those which have definite limits: as light is said to be ἐν ἀορίστῳ τῷ διαφανεῖ (*De Sensu*, c. 3, 439, a, 26), so colour is defined (*ibid.* 439, b, 11) as τὸ τοῦ διαφανοῦς ἐν σώματι ὡρισμένῳ πέρας. White and black correspond on the surface of bodies to light and darkness (439, b, 16), and from these two primary colours come all the others, not merely by the mechanical confusion of their atomic elements, nor by the shining of one through the other, but also by a real process of mixture, such as is described at p. 420. If they are mixed in simple numerical proportion, we have pure colours; if otherwise, impure. Inclusive of black and white, Aristotle enumerates in all seven primary colours (*ibid.* 439, b, 18 to the end of the chapter, and also c. 6, 445, b, 20 sqq., and c. 4, 442, a, 19 sqq. Cf. *De An.* ii. 7 *init.*; *ibid.* 419, a, 1 sqq.; *Meteor.* iii. 4, 373, b, 32 sqq., i. 5, 342, b, 4). The treatise upon colour starts from somewhat different premisses; *vide* PRANTL, who treats Aristotle's doctrine of colour from different points of view in the most exhaustive manner, pp. 86-159, as also BÄUMKER, *Arist. Lehre v. d. Sinnesvermögen* (1877), p. 21 sqq.—Sound is said to be motion caused by the concussion of hard bodies and transmitting itself through the medium of the air. It was to describe this idea of the sound-medium that Theophrastus and other Peripatetics invented the word διηχὲς, formed upon the analogy of διαφανὴς, just as in like manner they invented δίοσμος to describe the medium by which smell is transmitted, PHILOP. *De An.* L, 4; cf. *ibid.* M, 8, o. 10, o. Those notes are high which make a forcible impression on the ear in a brief time, *i.e.* quick notes; those on the other hand are deep which take a longer time to produce a weak impression, *i.e.* slow ones (*De An.* ii. 8, 419, b, 4-420, b, 5). Bodies which are fastened into others and carried round by them as the stars are, produce no sound by their motion (*De Cœlo*, ii. 9, 291, a, 9 sqq.)—Smell is held to be caused by dry materials which are dissolved in moisture, *i.e.* in water or air (ἔγχυμος ξηρότης, 443, a, 1, b, 4; note that the earlier and provisional description of ὀσμὴ as καπνώδης ἀναθυμίασις, *De Sensu*, 2, 438, b, 24, is rejected, *ibid.* c. 5, 443, a, 21). This is how they become objects to the sense (*De Sensu*, c. 5, 442, b, 27-443, b, 16; *De An.* ii. 9, 421, a, 26 sqq., 422, a, 6; cf. BÄUMKER, 28 sq.)—In the same way Taste is the effect of the union of dry or earthy material

with moisture, which, however, in this case is not that of water and air, as in the case of smell, but of water alone. The object of the sense of taste is χυμοί: χυμὸς again is defined as τὸ γιγνόμενον ὑπὸ τοῦ εἰρημένου ξηροῦ [viz. τοῦ τροφίμου ξηροῦ] πάθος ἐν τῷ ὑγρῷ, τῆς γεύσεως τῆς κατὰ δύναμιν ἀλλοιωτικὸν εἰς ἐνέργειαν [*i.e.* which causes our sense or faculty of taste actually to feel a sensation, 441, b, 19], τοῦ τροφίμου ξηροῦ πάθος ἢ στέρησις (*ibid.* l. 24). As all colours are a mixture of white and black, so all tastes (λιπαρὸν and ἁλμυρὸν, δριμὺ and αὐστηρὸν, στρυφνὸν and ὀξὺ) are a mixture of sweet and bitter; if these elements are mingled in a certain proportion we have pleasant tastes; otherwise, unpleasant ones (*De Sensu*, c. 4; *De An.* ii. 10, BÄUMK. 32 sq.). In this way the law discovered by the Pythagoreans which declared that the harmony and discord of sounds depended upon certain numerical relations is considered also to apply, not only to colours, but to tastes (χυμοί). *De Sensu*, 4, 442, a, 19 sqq. c. 7, 448, a, 15. Aristotle compares seven principal tastes to the seven primary colours. Further investigations into the nature of χυμοὶ he reserves (*De Sensu*, c. 4 *fin.*) for the φυσιολογία περὶ τῶν φυτῶν. Upon the treatise attributed to him π. χυμῶν, see p. 84, n. 1.—The sense of Touch has for its object all those general qualities of bodies (*De An.* ii. 11, 422, b, 25, 423, b, 26), which are ultimately resolvable into terms of the elementary oppositions referred to on p. 479, *supra*, and do not, therefore, call for further special notice here.

END OF THE FIRST VOLUME.

PRINTED BY
SPOTTISWOODE AND CO., NEW-STREET SQUARE
LONDON

# ARISTOTLE

## AND THE EARLIER PERIPATETICS

VOL. II.

# ARISTOTLE

AND

# THE EARLIER PERIPATETICS

*BEING A TRANSLATION FROM*

*ZELLER'S 'PHILOSOPHY OF THE GREEKS'*

BY

B. F. C. COSTELLOE, M.A.

AND

J. H. MUIRHEAD, M.A.

*IN TWO VOLUMES—VOL. II.*

LONGMANS, GREEN, AND CO.

39 PATERNOSTER ROW, LONDON

NEW YORK AND BOMBAY

1897

# CONTENTS

OF

# THE SECOND VOLUME

## CHAPTER X

### PHYSICS—*continued*

### C. *Living Creatures*



## CHAPTER XI

### PHYSICS—*continued*

### *Man*

## CHAPTER XII

### PRACTICAL PHILOSOPHY

### A. *Ethics*



## CHAPTER XIII

### PRACTICAL PHILOSOPHY—*continued*

### B. *Politics*



## CHAPTER XIV

### RHETORIC

## CHAPTER XV

### THEORY OF FINE ART



## CHAPTER XVI

### RELIGIOUS ASPECT OF ARISTOTLE'S PHILOSOPHY



## CHAPTER XVII

### RETROSPECT



## CHAPTER XVIII

### THE PERIPATETIC SCHOOL: THEOPHRASTUS



## CHAPTER XIX

### EUDEMUS, ARISTOXENUS, DICÆARCHUS, AND OTHERS

## CHAPTER XX

### THE SCHOOL OF THEOPHRASTUS: STRATO



## CHAPTER XXI

### THE PERIPATETIC SCHOOL AFTER STRATO TILL TOWARDS THE END OF THE SECOND CENTURY



## APPENDIX

# *Addenda and Corrigenda.*

Page 5, n. 2, col. 2, l. 10, *for* cut *read* cut in pieces
„ 6, l. 8, *for* alien *read* allied
„ 61, l. 5, *for* force *read* faculty
„ 90, n. col. 1, l. 19, *for* whole *read* whale
„ 111, n. 3, col. 2, ll. 2, 7, *for* cylinders *read* springs
„ 147, n. col. 1, l. 16, *for* these last, however, are merely causes *read* the satisfaction of a want, moreover, is merely the cause
„ 152, n. 1, col. 1, l. 3, *omit* wrong
„ 171, l. 7, *for* quality *read* equality
„ 172, n. 2, col. 2, l. 3 from bottom, *after* things *read* that
„ 178, l. 4, *for* moral insight *read* moral virtue
„ 182, n. col. 1, l. 6, *for* p. 182 *read* p. 183
„ 184, n. col. 2, l. 10 from bottom, *for* picture *read* future
„ 195, n. 4, col. 1, l. 4 from bottom, *for* 3 on preceding page *read* 2 *supra*
„ 196, n. 1, col. 1, l. 3, *for* pupil *read* audience
„ 204, n. 2, col. 2, l. 5 from bottom, *for* p. 203 *supra*, *read* Appendix, p. 507.
„ 231, n. 1, col. 1, l. 9, *for* finds itself more at home *read* exercises more influence
„ 242, l. 10, *for* indispensable *read* indisputable
„ 243, n. 1, col. 1, l. 6, *for* chiefly *read* nearly
„ 245, l. 1, *for* But even any one of such advantages as these confers *read* But even such advantages as these confer of themselves no title to rule in the State.
„ 259, n. 1, col. 1, l. 8, *for* size *read* greatness
„ 267, n. col. 1, l. 9, *omit* or
„ 274, l. 8, *for* or form, differing *read* or from differing
„ 292, l. 9, *for* But as he regards . . . sense *read* Since, however, proof is the chief end in view
„ 322, n. col. 1, l. 8 from bottom, *for* added *read* not added
„ 324, n. 5, col. 1, l. 11, *omit* vol. i.
„ 325, ll. 1, 3, *for* section *read* chapter
„ „ n. 2, col. 2, l. 5, *before* p. 291 *read* vol. ii.
„ 327, l. 6, *for* scientific *read* theoretic
„ „ last line, *omit* and
„ 331, n. 2, col. 1, l. 2 from bottom, *for* μανείᾳ *read* μαντείᾳ
„ 335, n. 1, col. 1, l. 10, *for* in chap. i. *read* vol. i. pp. 5, n. 7; 20, n. 2; 38, n.
„ 339, l. 9, *for* motion *read* matter
„ „ l. 10, *for* relation *read* relationship
„ 375, n. 1, col. 1, l. 9, *for* Melinus *read* Melissus
„ 382, l. 6 from bottom, *for* geological *read* zoological

*References.*

The following references are to Vol. i. :—Vol. ii. p. 159, n. 2, col. 1, l. 8; 180, n. 2, col. 2, l. 2; 181, n. col. 2, l. 1, and l. 11 from bottom; 182, n. 1, col. 1, l. 6 from bottom; 204, n. 2, col. 1, ll. 3 and 10, and l. 2 from bottom; 206, n. 4, col. 2, l. 3 from bottom; 219, n. 3, col. 1, l. 4 from bottom; 236, n. col. 1, l. 10 from bottom; 267, n. col. 1, l. 10; 292, n. 1, col. 1, l. 10; 302, n. 1, col. 1, ll. 6, 12; 331, n. 1, col. 1, l. 1; 332, n. 1, col. 1, l. 1; 343, n. 2, col. 2, l. 1; 349, n. 3, col. 2, l. 1 from bottom.

# ARISTOTLE

AND THE

# EARLIER PERIPATETICS

## CHAPTER X

### [CHAP. IX. C. OF GERMAN TEXT]

### *Living Creatures*

#### 1. *The Soul and Life*

WHAT distinguishes living creatures from all others is the Soul.[1] All life, in fact, consists in the power of self-movement,[2] that is, in a capacity inherent in a being of effecting changes in itself: the simplest form of which is confined, as in the case of plants, to nutrition, growth, and decay.[3] But every movement implies two elements

[1] *De An.* i. 1, 407, a, 4: the investigation into the nature of the soul is of the highest value for science, *μάλιστα δὲ πρὸς τὴν φύσιν· ἔστι γὰρ οἷον ἀρχὴ τῶν ζῴων* [ἡ ψυχή].

[2] *Ibid.* ii. 1, 412, b, 16, cf. a, 27, and see *infra.*

[3] *Ibid.* ii. 2, 413, a, 20: *λέγομεν οὖν . . . διωρίσθαι τὸ ἔμψυχον τοῦ ἀψύχου τῷ ζῆν. πλεοναχῶς δὲ τοῦ ζῆν λεγομένου, κἂν ἕν τι τούτων ἐνυπάρχῃ μόνον, ζῆν αὐτό φαμεν, οἷον νοῦς, αἴσθησις, κίνησις καὶ στάσις ἡ κατὰ τόπον, ἔτι κίνησις ἡ κατὰ τροφὴν καὶ φθίσις τε καὶ αὔξησις. διὸ καὶ τὰ φυόμενα πάντα δοκεῖ ζῆν· φαίνεται γὰρ ἐν αὐτοῖς ἔχοντα δύναμιν καὶ ἀρχὴν τοιαύτην, δι' ἧς αὔξησίν τε καὶ φθίσιν λαμβάνουσι . . . οὐδεμία γὰρ αὐτοῖς ὑπάρχει δύναμις ἄλλη ψυχῆς.* As this lowest form of life presents itself wherever the higher is (see

—something that moves, and something that is moved: form and matter; and if a thing moves itself, it must contain this duality within itself.[1] Hence every being that has life must be a compound being; and if we call the material part, which is subject to motion, the body, it will follow that the form, which is the cause of motion, has a being separate from and independent of the body.[2] And as the form in general is identified with the efficient and the final cause, this being may also be said to be the final aim or end of the body.[3] The form thus considered as motive or efficient force is called by Aristotle 'Entelechy';[4] and hence he defines the Soul as

*infra*) it may be treated as the universal mark of a living thing; *ibid.* c. 1, 412, a, 13: τῶν δὲ φυσικῶν [sc. σωμάτων] τὰ μὲν ἔχει ζωὴν τὰ δ' οὐκ ἔχει· ζωὴν δὲ λέγομεν τὴν δι' αὐτοῦ [αὑτοῦ] τροφήν τε καὶ αὔξησιν καὶ φθίσιν. On the other hand, *De An.* i. 2, 403, b, 25 (τὸ ἔμψυχον δὴ τοῦ ἀψύχου δυοῖν μάλιστα διαφέρειν δοκεῖ, κινήσει τε καὶ τῷ αἰσθάνεσθαι), expresses merely the popular view, not the technical definition, of life.

[1] See p. 4, n. 1, *infra*.

[2] *De An.* ii. 1, 412, a, 15: ὥστε πᾶν σῶμα φυσικὸν μετέχον ζωῆς οὐσία ἂν εἴη, οὐσία δ' οὕτως ὡς συνθέτῃ· ἐπεὶ δ' ἐστὶ σῶμα τοιόνδε· [TRENDELENBURG: σῶμα καὶ τοιονδί; TORSTRIK: καί σ. τοιόνδε], ζωὴν γὰρ ἔχον, οὐκ ἂν εἴη τὸ σῶμα ψυχή. οὐ γάρ ἐστι τῶν καθ' ὑποκειμένου τὸ σῶμα, μᾶλλον δ' ὡς ὑποκείμενον καὶ ὕλη. ἀναγκαῖον ἄρα τὴν ψυχὴν οὐσίαν εἶναι ὡς εἶδος σώματος φυσικοῦ δυνάμει ζωὴν ἔχοντος. *Part. An.* i. 1, 641, a, 14–32; *Gen. An.* ii. 4, 738, b, 26; *Metaph.* viii. 3, 1043, a, 35. Aristotle had already described the soul in the *Eudemus* as εἶδός τι; see i. 383 sq., *supra*.

[3] *De An.* ii. 4, 415, b, 7, where after the passage quoted, i. 356, n. 1, *sup.*, he goes on, l. 12: ὅτι μὲν οὖν ὡς οὐσία [sc. αἰτία ἐστὶν ἡ ψυχή] δῆλον· τὸ γὰρ αἴτιον τοῦ εἶναι πᾶσιν ἡ οὐσία, τὸ δὲ ζῆν τοῖς ζῶσι τὸ εἶναί ἐστιν, αἰτία δὲ καὶ ἀρχὴ τούτων ἡ ψυχή. ἔτι τοῦ δυνάμει ὄντος λόγος ἡ ἐντελέχεια. φανερὸν δ' ὡς καὶ οὗ ἕνεκεν ἡ ψυχὴ αἰτία· ὥσπερ γὰρ ὁ νοῦς ἕνεκά του ποιεῖ, τὸν αὐτὸν τρόπον ἡ φύσις, καὶ τοῦτ' ἔστιν αὐτῇ τέλος. τοιοῦτον δ' ἐν τοῖς ζῴοις ἡ ψυχὴ καὶ [?] κατὰ φύσιν· πάντα γὰρ τὰ φυσικὰ σώματα τῆς ψυχῆς ὄργανα . . . ὡς ἕνεκα τῆς ψυχῆς ὄντα. He then goes on to show, what is a matter of course, that the soul is an efficient cause. *Part. An.* i. 1, 641, a, 25: the οὐσία is both efficient and final cause; τοιοῦτον δὲ τοῦ ζῴου ἤτοι πᾶσα ἡ ψυχὴ ἢ μέρος τι αὐτῆς.

[4] Cf. i. 379, *supra*.

the Entelechy, or more accurately as the First Entelechy, of a natural body endowed with the capacity of life.[1] This again applies to none but organic bodies, the members of which are designed for some definite purpose and serve as instruments for the fulfilment of special functions.[2] The Soul accordingly is the First

[1] *De An.* ii. 1, Aristotle proceeds: ἡ δ' οὐσία ἐντελέχεια [the form is the efficient force]. τοιούτου ἄρα σώματος ἐντελέχεια. The expression 'entelecheia' has, however, a double sense: at one time it is the power of action that is understood by it; at another, the activity itself (the standing example of the former meaning is ἐπιστήμη, of the latter, θεωρεῖν; see *ibid.*, and cf. *Metaph.* ix. 6, 1048, a, 34; *Phys.* viii. 4, 255, a, 33; *De Sensu*, 4, 441, b, 22; *Gen. An.* ii. 1, 735, a, 9; TRENDELENBURG, *De An.* 314 sq.; BONITZ, *Arist. Metaph.* ii. 394). The soul can be called entelecheia only in the former sense (that of the power), seeing that it is present even in sleep; this is what is meant by the addition πρώτη, when in l. 27 it is said: ψυχή ἐστιν ἐντελέχεια ἡ πρώτη σώματος φυσικοῦ δυνάμει ζωὴν ἔχοντος, for the power always precedes the activity.

[2] Aristotle proceeds, l. 28: τοιοῦτο δὲ [sc. δυνάμει ζωὴν ἔχον], ὃ ἂν ᾖ ὀργανικόν, adding that the parts of plants also are organs, though very simple ones (cf. *Part. An.* ii. 10, 655, b, 37). On the definition of organic life cf. the passage quoted by TRENDELENBURG *in loco*; *Part. An.* i. 1, 642, a, 9: as the axe to fulfil its purpose must be hard, οὕτως καὶ ἐπεὶ τὸ σῶμα ὄργανον (ἕνεκά τινος γὰρ ἕκαστον τῶν μορίων, ὁμοίως δὲ καὶ τὸ ὅλον) ἀνάγκη ἄρα τοιονδὶ εἶναι καὶ ἐκ τοιωνδί, εἰ ἐκεῖνο ἔσται. *Ibid.* i. 5, 645, b, 14: ἐπεὶ δὲ τὸ μὲν ὄργανον πᾶν ἕνεκά του, τὸ δ' οὗ ἕνεκα πρᾶξίς τις, φανερὸν ὅτι καὶ τὸ σύνολον σῶμα συνέστηκε πράξεώς τινος ἕνεκα πλήρους. As the saw exists for the sake of sawing, so τὸ σῶμά πως τῆς ψυχῆς ἕνεκεν, καὶ τὰ μόρια τῶν ἔργων πρὸς ἃ πέφυκεν ἕκαστον. *Ibid.* ii. 1, 646, b, 10 sqq.: of the constituent parts of living things some are homogeneous, others heterogeneous (see i. 517, n. 6, *supra*); the former, however, exist for the sake of the latter; ἐκείνων [sc. τῶν ἀνομοιομερῶν] γὰρ ἔργα καὶ πράξεις εἰσίν . . . διόπερ ἐξ ὀστῶν καὶ νεύρων &c. συνεστήκασι τὰ ὀργανικὰ τῶν μορίων. *Ibid.* ii. 10, 655, b, 37: plants have only a few heterogeneous parts; πρὸς γὰρ ὀλίγας πράξεις ὀλίγων ὀργάνων ἡ χρῆσις. The 'organic' parts of the body, therefore, are those which serve a definite purpose; for this use of the word see, e.g. *Gen. An.* ii. 4, 739, b, 14: τοῖς ὀργανικοῖς πρὸς τὴν συνουσίαν μορίοις. *Ingr. An.* 4, 705, b, 22: ὅσα μὲν γὰρ ὀργανικοῖς μέρεσι χρώμενα (λέγω δ' οἷον ποσὶν ἢ πτέρυξιν ἤ τινι ἄλλῳ τοιούτῳ) τὴν εἰρημένην μεταβολὴν [locomotion] ποιεῖται . . . ὅσα δὲ μὴ τοιούτοις μορίοις, αὐτῷ δὲ τῷ σώματι διαλήψεις ποιούμενα προέρχεται. All the

Entelechy of a Natural Organic Body.[1] This definition does not, indeed, apply to the higher portion of the Soul, which in the human spirit is added to its other parts. With this, however, Natural Philosophy has nothing to do: it is rather the subject-matter of the 'First Philosophy.'[2]

The soul, considered as the form and moving principle of the body, must itself be incorporeal;[3] and here Aristotle contradicts the interpreters of his theory who represent it as being material in nature. It does not move itself, as Plato thought, for then it would be a *motum* as well as a *movens*, and every *motum* exists in space.[4] Nor is it a harmony of its own body;[5] for such a harmony would be either a union or a proportionate mixture of different materials, and the soul is neither one nor the other: the notion of harmony is better suited to physical conditions, such as health, than to the soul.[6] Again, it is not a number that moves itself,

parts of a living body, however, serve some active purpose.

[1] *De An.* ii. 1, 412, b, 4: εἰ δή τι κοινὸν ἐπὶ πάσης ψυχῆς δεῖ λέγειν, εἴη ἂν ἐντελέχεια ἡ πρώτη σώματος φυσικοῦ ὀργανικοῦ, and a similar definition is given, l. 9 sqq.: it is the λόγος [or the οὐσία κατὰ τὸν λόγον] σώματος φυσικοῦ τοιουδὶ ἔχοντος ἀρχὴν κινήσεως καὶ στάσεως ἐν ἑαυτῷ.

[2] See on this subject *Part. An.* ii. 1, 641, a, 17–b. 10: cf. *De An.* i. 1, 403, a, 27, b, 9 sqq., ii. 2, 413, b, 24.

[3] See p. 2, n. 2, *supra*. *De Juvent.* 1, 467, b, 14: δῆλον ὅτι οὐχ οἷόν τ' εἶναι σῶμα τὴν οὐσίαν αὐτῆς [τῆς ψυχῆς], ἀλλ' ὅμως ὅτι γ' ἔν τινι τοῦ σώματος ὑπάρχει μορίῳ, φανερόν.

[4] *De An.* i. 3, 404, a, 21, c. 4, 408, a, 30 sqq. The further reasons that are urged against this view we must here pass over. On the Platonic conception of a world-soul see i. 459, n. 5, *supra*.

[5] On this assumption, cf. ZELLER, *Ph. d. Gr.* i. 413.

[6] *De An.* i. 4 *init.* 408, a, 30, where this conclusion is supported with further arguments, cf. PHILOP. *De An.* E, 2, m, (*Ar. Fr.* 41): κέχρηται δὲ καὶ αὐτὸς ὁ Ἀριστοτέλης . . . ἐν τῷ Εὐδήμῳ τῷ διαλόγῳ δύο ἐπιχειρήσεσι ταύταις. μιᾷ μὲν οὕτως· τῇ ἁρμονίᾳ, φησίν, ἐστί τι ἐναντίον, ἡ ἀναρμοστία· τῇ δὲ ψυχῇ οὐδὲν ἐναντίον· οὐκ ἄρα ἡ ψυχὴ ἁρμονία ἐστίν· . . .

for it does not move itself, and if it were a number it certainly could not do so.[1] It is not some one sort of material, as Democritus thought, nor a mixture of all materials, as Empedocles held:[2] for if it were a material it could not spread through all parts of the body,[3] since two bodies cannot coexist in the same space; and if the soul must contain all materials, in order that it may be able to perceive them all, the same argument would oblige us to ascribe to it all combinations of materials in order that it may know all. We cannot identify it with the air we breathe, since all living creatures do not breathe.[4] Nor is it diffused through all sorts of matter,[5] since simple bodies are not living creatures.

The soul, then, is not in any sense corporeal,

δευτέρᾳ δέ· τῇ ἁρμονίᾳ, φησὶ, τοῦ σώματος ἐναντίον ἐστὶν ἡ ἀναρμοστία τοῦ σώματος· ἀναρμοστία δὲ τοῦ ἐμψύχου σώματος νόσος καὶ ἀσθένεια καὶ αἶσχος. ὧν τὸ μὲν ἀσυμμετρία ἐστὶ τῶν στοιχείων ἡ νόσος, τὸ δὲ τῶν ὁμοιομερῶν ἡ ἀσθένεια, τὸ δὲ τῶν ὀργανικῶν τὸ αἶσχος. [On this, however, see i. 517, n. 6, *supra*.] εἰ τοίνυν ἡ ἀναρμοστία νόσος καὶ ἀσθένεια καὶ αἶσχος, ἡ ἁρμονία ἄρα ὑγεία καὶ ἰσχὺς καὶ κάλλος. ψυχὴ δὲ οὐδέν ἐστι τούτων, οὔτε ὑγεία φημὶ οὔτε ἰσχὺς οὔτε κάλλος· ψυχὴν γὰρ εἶχεν καὶ ὁ Θερσίτης αἴσχιστος ὤν. οὐκ ἄρα ἐστὶν ἡ ψυχὴ ἁρμονία. καὶ ταῦτα μὲν ἐν ἐκείνοις. THEMIST. *De An.* 44 sp.; SIMPL. *De An.* 14, a, o, and OLYMPIODORUS in *Phæd.* p. 142, also mention this argument from the *Eudemus*.

[1] *Ibid.* 408, b, 32 sqq.; cf. ZELL. *Ph. d. Gr.* i. 871, 2.

[2] On the former of these views see *De An.* i. 5 *init.* c. 3, 406, b, 15 sqq. c. 2, 403, b, 28, and *Ph. d. Gr.* i. 807 sq.; on the latter, *De An.* i. 5, 409, b, 23 sqq. c. 2, 404, b, 8, *Ph. d. Gr.* i. 725. Only one of Aristotle's many objections to the theory of Empedocles is here given.

[3] As it is obvious that the nutritive and sensitive soul at least does, from the fact that when a plant or an animal is cut, life remains in all parts alike so long as its organic conditions are present; *De An.* i. 5, 411, b. 19, ii. 2, 413, b, 13; cf. i. 4, 409, a, 9; *Longit. V.* 6, 467, a, 18; *Juv. et Sen.* 2, 468, b, 2 sqq. 483.

[4] *De An.* i. 5, 410, b, 27.

[5] Aristotle attributes this view first to Thales, but identifies it specially with Diogenes of Apollonia and Heraclitus; cf. *De An.* i. 5, 411, a, 7 sqq.; also c. 2, 405, a, 19 sqq. and ZELL. *Ph. d. Gr.* i. pp. 178, 2; 238; 240; 587, 2; 642 sq.

and none of the attributes peculiar to corporeal substances can be ascribed to it. On the other hand, it cannot exist without a body.[1] Aristotle is even anxious to indicate the particular matter in which it resides, and which it carries with it as it passes from one being to another in the process of procreation. This he describes at one time as Caloric (θερμὸν), at another as Pneuma, regarding it as alien to the æther, and of a higher nature than the four elements; but he is wholly unable to give any clear account of its qualities, or to harmonise this conception with the general teaching of the *Physics*.[2] The only right view is that the soul is

[1] *De An.* ii. 1, 413, a, 4: ὅτι μὲν οὖν οὐκ ἔστιν ἡ ψυχὴ χωριστὴ τοῦ σώματος, ἢ μέρη τινὰ αὐτῆς, εἰ μεριστὴ πέφυκεν, οὐκ ἄδηλον . . . οὐ μὴν ἀλλ' ἔνιά γε οὐθὲν κωλύει, διὰ τὸ μηθενὸς εἶναι σώματος ἐντελεχείας. Cf. *Gen. An.* ii. 3, 736, b, 22 sqq. 737, a, 7 sqq. and p. 4, n. 3, *supra*, and p. 8, n. 1, *infra*.

[2] The principal passage upon the subject is *Gen. An.* ii. 3, 736, b, 29: πάσης μὲν οὖν ψυχῆς δύναμις ἑτέρου σώματος ἔοικε κεκοινωνηκέναι καὶ θειοτέρου τῶν καλουμένων στοιχείων· ὡς δὲ διαφέρουσι τιμιότητι αἱ ψυχαὶ καὶ ἀτιμίᾳ ἀλλήλων, οὕτω καὶ ἡ τοιαύτη διαφέρει φύσις. πάντων μὲν γὰρ ἐν τῷ σπέρματι ἐνυπάρχει, ὅπερ ποιεῖ γόνιμα εἶναι τὰ σπέρματα, τὸ καλούμενον θερμόν. τοῦτο δ' οὐ πῦρ οὐδὲ τοιαύτη δύναμίς ἐστιν, ἀλλὰ τὸ ἐμπεριλαμβανόμενον ἐν τῷ σπέρματι καὶ ἐν τῷ ἀφρώδει πνεῦμα καὶ ἡ ἐν τῷ πνεύματι φύσις, ἀνάλογον οὖσα τῷ τῶν ἄστρων στοιχείῳ. It is not fire but heat, whether of the sun or of animals, that generates life. τὸ δὲ τῆς γονῆς σῶμα, ἐν ᾧ συναπέρχεται τὸ σπέρμα τὸ τῆς ψυχικῆς ἀρχῆς, τὸ μὲν χωριστὸν ὂν σώματος, ὅσοις ἐμπεριλαμβάνεται τὸ θεῖον (τοιοῦτος δ' ἐστὶν ὁ καλούμενος νοῦς), τὸ δ' ἀχώριστον, τοῦτο τὸ σπέρμα [with WIMMER read σῶμα] τῆς γονῆς διαλύεται καὶ πνευματοῦται φύσιν ἔχον ὑγρὰν καὶ πνευματώδη. As the material in which the soul resides is here expressly distinguished from the elements, it is naturally thought of as æther, which elsewhere (see i. 476, n. 2, and 477, n. 1, *supra*) is described in almost identical terms. But on the other hand the æther is neither hot nor cold, nor as the element of the immutable spheres can it ever enter the region of the earthly changes of birth and death (see i. 473 sq. *supra*, and the admirable discussion in MEYER'S *Arist. Thierk.* 409 sqq.). Even if, relying upon *De Cælo*, i. 2, 269, a, 7 (on which, however, see i. 474, n. 1, *supra*), we suppose (with KAMPE, *Erkenntnissth. d. Ar.* 23) that it is forcibly injected into the organic germ, the question would still remain how we are to explain such a process

the form of its body, since the form cannot exist without the matter to which it belongs, and yet it is not

and how the evolution which we must ascribe to the σπέρμα τῆς ψυχικῆς ἀρχῆς, whether we take διαλύεσθαι as referring to the germ itself or only to the γονή, is consistent with the immutability of the æther (i. 476, *supra*). The material in question, moreover, is never described as æther. It is merely compared with it. Nor, indeed, does Aristotle ever speak of an æthereal matter, but only of vital heat and vital breath, as residing in the body. Similarly *De Vita*, 4, 469, b, 6: πάντα δὲ τὰ μόρια καὶ πᾶν τὸ σῶμα τῶν ζῴων ἔχει τινὰ σύμφυτον θερμότητα φυσικήν· whence the heat of the living, the coldness of the dead, body. ἀναγκαῖον δὴ ταύτης τὴν ἀρχὴν τῆς θερμότητος ἐν τῇ καρδίᾳ τοῖς ἐναίμοις εἶναι, τοῖς δ' ἀναίμοις ἐν τῷ ἀνάλογον· ἐργάζεται γὰρ καὶ πέττει τῷ φυσικῷ θερμῷ τὴν τροφὴν πάντα, μάλιστα δὲ τὸ κυριώτατον. With the heat of the heart life too becomes extinct, διὰ τὸ τὴν ἀρχὴν ἐντεῦθεν τῆς θερμότητος ἠρτῆσθαι πᾶσι, καὶ τῆς ψυχῆς ὥσπερ ἐμπεπυρευμένης ἐν τοῖς μορίοις τούτοις [the heart is as it were the hearth on which the soul's fire burns] . . . ἀνάγκη τοίνυν ἅμα τό τε ζῆν ὑπάρχειν καὶ τὴν τοῦ θερμοῦ τούτου σωτηρίαν, καὶ τὸν καλούμενον θάνατον εἶναι τὴν τούτου φθοράν. *Part. An.* ii. 3, 650, a, 2: as it is only by heat that food can be digested, all plants and animals require an ἀρχὴ θερμοῦ φυσική. c. 7, 652, a, 7 sqq.: the soul is not fire but resides in a fiery body, heat being its chief instrument in the performance of its functions of nourishment and motion, iii. 5, 667, b, 26: τὴν τοῦ θερμοῦ ἀρχὴν ἀναγκαῖον ἐν τῷ αὐτῷ τόπῳ [as the sensitive soul] εἶναι. *De Respir.* c. 8, 474, a, 25, b, 10: τὸ ζῆν καὶ ἡ τῆς ψυχῆς ἕξις μετὰ θερμότητός τινός ἐστιν . . . πυρὶ γὰρ ἐργάζεται πάντα. This heat resides in the heart. The other faculties of the soul cannot exist without the nutritive, nor the nutritive ἄνευ τοῦ φυσικοῦ πυρός· ἐν τούτῳ γὰρ ἡ φύσις ἐμπεπύρευκεν αὐτήν. c. 13, 477, a, 16: the higher animals have more heat; ἅμα γὰρ ἀνάγκη καὶ ψυχῆς τετυχηκέναι τιμιωτέρας. c. 16, 478, a, 28: all animals require cooling διὰ τὴν ἐν τῇ καρδίᾳ τῆς ψυχῆς ἐμπύρωσιν. c. 21 *init.*: τοῦ θερμοῦ, ἐν ᾧ ἡ ἀρχὴ ἡ θρεπτική (which, 480, b, 1, is also called πῦρ). *Ibid.* c. 17, 479, a, 7 sqq.: the ἀρχὴ τῆς ζωῆς gives out ὅταν μὴ καταψύχηται τὸ θερμὸν τὸ κοινωνοῦν αὐτῆς. When, therefore, through old age the lungs (correspondingly the gills) grow dry and stiff, the fire (*i.e.* the vital heat) gradually dies away and is easily put out altogether. διὸ γὰρ τὸ ὀλίγον εἶναι τὸ θερμὸν, ἅτε τοῦ πλείστου διαπεπνευκότος ἐν τῷ πλήθει τῆς ζωῆς, . . . ταχέως ἀποσβέννυται. *De An.* ii. 4 *fin.*: ἐργάζεται δὲ τὴν πέψιν τὸ θερμόν: διὸ πᾶν ἔμψυχον ἔχει θερμότητα. *Gen. An.* ii. 1, 732, a, 18: the higher animals are larger; τοῦτο δ' οὐκ ἄνευ θερμότητος ψυχικῆς. c. 6, 743, a, 26: ἡ δὲ θερμότης ἐνυπάρχει ἐν τῷ σπερματικῷ περιττώματι. 744, a, 29: man has the purest θερμότης ἐν τῇ καρδίᾳ. Cf. *Gen. An.* ii. 4, 740, b, 29: the nutritive power of the soul forms and feeds plants and ani-

itself material.[1] This enables us to answer the question about the unity of soul and body. Their relation to one another is just the same as that which subsists

mals, *χρωμένη οἷον ὀργάνοις θερμότητι καὶ ψυχρότητι*. According to *Gen. An.* iii. 11 (see i. 460, n. 3, *supra*) the vital heat resides in the *πνεῦμα*, the *ἀρχὴ τοῦ πνεύματος* (*De Somno*, 2, 456, a, 7) in the heart, from which all animal heat proceeds; in those animals which have no heart, *ἐν τῷ ἀνάλογον τὸ σύμφυτον πνεῦμα ἀναφυσώμενον καὶ συνιζάνον φαίνεται* (*ibid.* l. 11). This *πνεῦμα σύμφυτον*, which is a natural and inherent property, not an external adjunct, of animals, is frequently mentioned, as in *Gen. An.* ii. 6, 744, a, 3, v. 2, 781, a, 23 (ZELLER, *Ph. d. Gr.* i. 16, 659, b, 17), where we are told that it pervades the channels of hearing and smell, and is the medium by which sounds and smells are conveyed to their respective senses; *Part. An.* iii. 6, 669, a, 1, where it is said that in the case of bloodless animals, which have less internal heat and do not require to breathe, the *πνεῦμα σύμφυτον* is sufficient for purposes of cooling. As, however, according to the above, it is also the seat of animal heat, the phrase must be understood in the sense explained in *Respir.* 9, 474, b, 31 sqq., to mean that cooling, in the case of such non-respirating animals as require more than that caused by the air or water that surrounds them, is produced by the expansion and contraction of the *πνεῦμα ἔμφυτον*, which in turn, by setting in motion the abdominal membrane which produces, *e.g.*, the chirp of the cricket, causes it to act as a fan (for this is the sense in which we must understand 475, a, 11, 669, b, 1). Beside these passages, the statement in *Gen. An.* ii. 3, stands rather isolated. Granting that the *σῶμα θειότερον τῶν στοιχείων* there spoken of is distinguished from the *πνεῦμα* in which it resides (*ἡ ἐν τῷ πνεύματι φύσις*), it is yet hardly possible to attribute to it an æthereal nature. The truth seems rather to be that Aristotle here feels a want which his philosophy as a whole does not enable him to supply.—The writer of the spurious treatise *π. Πνεύματος* discusses the nature of the *πνεῦμα ἔμφυτον*, though he by no means confines himself to this subject. He gives no indication, however, of the view he held of its material character.—The question of the relation of Aristotle's assumptions with regard to the *πνεῦμα* to his doctrine of the Nous is for later discussion (see Ch. XI. on the Reason, *infra*).

[1] See p. 2, n. 2, *supra*, and *Metaph.* vii. 10, 1035, b, 14: *ἐπεὶ δὲ ἡ τῶν ζῴων ψυχὴ (τοῦτο γὰρ οὐσία τοῦ ἐμψύχου) ἡ κατὰ τὸν λόγον οὐσία καὶ τὸ εἶδος καὶ τὸ τί ἦν εἶναι τῷ τοιῷδε σώματι.* c. 11, 1037, a, 5: the body is the *ὕλη*, the soul the *οὐσία ἡ πρώτη*. viii. 3, 1043, a, 35. *De An.* ii. 2, 414, a, 12: as the form is everywhere distinguished from the matter which receives it, so is the soul *τοῦτο ᾧ ζῶμεν καὶ αἰσθανόμεθα καὶ διανοούμεθα πρώτως, ὥστε λόγος τις ἂν εἴη καὶ εἶδος, ἀλλ' οὐχ ὕλη καὶ τὸ ὑποκείμενον· τριχῶς γὰρ λε-*

between form and matter.[1] To ask whether soul and body are one, is just as ridiculous as to ask whether the wax and the form impressed upon it are one. They are and they are not: they are separable in thought, inseparable in reality.[2] Life is not a combination of soul and body,[3] and the living being is not something joined together of these two parts;[4] but the soul is the active force that operates in the body, or, if you will, the body is the natural organ of the soul. We cannot separate them any more than we can separate the eye and eyesight.[5] None but a living body deserves the name of body,[6] and a particular soul can only exist in its own particular body.[7] Therefore the Pythagorean

γομένης τῆς οὐσίας, καθάπερ εἴπομεν, ὧν τὸ μὲν εἶδος, τὸ δὲ ὕλη, τὸ δὲ ἐξ ἀμφοῖν· τούτων δ' ἡ μὲν ὕλη δύναμις, τὸ δὲ εἶδος ἐντελέχεια· ἐπεὶ δὲ τὸ ἐξ ἀμφοῖν ἔμψυχον, οὐ τὸ σῶμά ἐστιν ἐντελέχεια ψυχῆς, ἀλλ' αὕτη σώματός τινος. καὶ διὰ τοῦτο καλῶς ὑπολαμβάνουσιν, οἷς δοκεῖ μήτ' ἄνευ σώματος εἶναι μήτε σῶμά τι ἡ ψυχή. σῶμα μὲν γὰρ οὐκ ἔστι, σώματος δέ τι. *De An.* ii. 1, 412, b, 11 sqq. thus illustrates: if the axe were a creature, its nature as an axe would be its soul; if the eye were a separate being, its eyesight (ὄψις) would be its soul, αὕτη γὰρ οὐσία ὀφθαλμοῦ ἡ κατὰ τὸν λόγον. ὁ δ' ὀφθαλμὸς ὕλη ὄψεως, ἧς ἀπολειπούσης οὐκ ἔστιν ὀφθαλμός. The soul is to the body as sight is to the eye.

[1] See i. 351, n. 1, *supra*.

[2] *De An.* ii. 1, 412, b, 6: the soul is the entelecheia of an organic body. διὸ καὶ οὐ δεῖ ζητεῖν εἰ ἓν ἡ ψυχὴ καὶ τὸ σῶμα, ὥσπερ οὐδὲ τὸν κηρὸν καὶ τὸ σχῆμα, οὐδ' ὅλως τὴν ἑκάστου ὕλην καὶ τὸ οὗ ὕλη.

[3] As perhaps the Platonists defined it, consistently with the account of death in *Phædo*, 64, c.

[4] *Metaph.* viii. 6, 1045, b, 11. *Top.* vi. 14 *init.*: ζῆν and the ζῷον are not a σύνθεσις ἢ σύνδεσμος of soul and body.

[5] *De An.* ii. 1, 413, a, 1: ὡς δ' ἡ ὄψις καὶ ἡ δύναμις τοῦ ὀργάνου ἡ ψυχὴ [sc. ἐντελέχειά ἐστιν]· τὸ δὲ σῶμα τὸ δυνάμει ὄν· ἀλλ' ὥσπερ ὁ ὀφθαλμὸς ἡ κόρη καὶ ἡ ὄψις, κἀκεῖ ἡ ψυχὴ καὶ τὸ σῶμα τὸ ζῷον.

[6] *Ibid.* 412, b, 11, 20, 25. *Part. An.* i. 1, 640, b, 33 sqq. 641, a, 18. *Gen. An.* ii. 5, 741, a, 10. *Meteor.* iv. 12, 389, b, 31, 390, a, 10. *Metaph.* vii. 10, 1035, b, 24.

[7] *De An.* ii. 2, 414, a, 21 (following on the passage quoted p. 8, n. 1, *supra*): καὶ διὰ τοῦτο ἐν σώματι ὑπάρχει, καὶ ἐν σώματι τοιούτῳ, καὶ οὐχ ὥσπερ οἱ πρότερον εἰς σῶμα ἐνήρμοζον αὐτήν, οὐθὲν προσδιορίζοντες ἐν τίνι καὶ ποίῳ, καίπερ οὐδὲ φαινομένου τοῦ τυχόντος δέχεσθαι τὸ τυχόν. οὕτω δὲ γίνεται καὶ κατὰ λόγον· ἑκάστου γὰρ ἡ ἐντελέχεια

notion of one soul passing through bodies of the most various sorts is just as absurd as if one should imagine that one and the same art could use tools of the most various kinds indifferently—that a flute, for example, could be of the same use to a carpenter as an axe.[1]

The true essence of everything is its form, and the essence of everything that comes into being is its purpose or end.[2] Living creatures are no exception to this law. Every living creature is a little world, a whole, the parts of which subserve as instruments the purpose of the whole.[3] But every instrument depends upon the nature of the work for which it is designed; so the body exists for the soul, and the qualities of every body are determined by those of its soul.[4] Nature, like a

ἐν τῷ δυνάμει ὑπάρχοντι καὶ τῇ οἰκείᾳ ὕλῃ πέφυκεν ἐγγίνεσθαι. Cf. the passages quoted, i. 221, n. 1, *supra*, from *Phys.* ii. 9, and elsewhere.

[1] *De An.* i. 3, 407, b, 13: most writers (Aristotle is thinking principally of Plato) make the mistake of speaking of the union of soul and body, οὐθὲν προσδιορίσαντες, διὰ τίν' αἰτίαν καὶ πῶς ἔχοντος τοῦ σώματος. καίτοι δόξειεν ἂν τοῦτ' ἀναγκαῖον εἶναι· διὰ γὰρ τὴν κοινωνίαν τὸ μὲν ποιεῖ τὸ δὲ πάσχει καὶ τὸ μὲν κινεῖται τὸ δὲ κινεῖ, τούτων δ' οὐθὲν ὑπάρχει πρὸς ἄλληλα τοῖς τυχοῦσιν. οἱ δὲ μόνον ἐπιχειροῦσι λέγειν ποῖόν τι ἡ ψυχή, περὶ δὲ τοῦ δεξομένου σώματος οὐθὲν ἔτι προσδιορίζουσιν, ὥσπερ ἐνδεχόμενον κατὰ τοὺς Πυθαγορικοὺς μύθους τὴν τυχοῦσαν ψυχὴν εἰς τὸ τυχὸν ἐνδύεσθαι σῶμα· δοκεῖ γὰρ ἕκαστον ἴδιον ἔχειν εἶδος καὶ μορφήν. παραπλήσιον δὲ λέγουσιν ὥσπερ εἴ τις φαίη τὴν τεκτονικὴν εἰς αὐλοὺς ἐνδύεσθαι· δεῖ γὰρ τὴν μὲν τέχνην χρῆσθαι τοῖς ὀργάνοις, τὴν δὲ ψυχὴν τῷ σώματι (cf. p. 8, n. 1, *supra*, *ad fin.*)

[2] See i. 375, n. 1, and i. 459, sqq. *supra*. The expression, *Part. An.* i. 1, 640, b, 28, ἡ γὰρ κατὰ τὴν μορφὴν φύσις κυριωτέρα τῆς ὑλικῆς φύσεως, is used with reference to the above question of the relation of soul and body.

[3] See p. 3, n. 2, *supra*, and *Phys.* viii. 2, 252, b, 24: εἰ δ' ἐν ζῴῳ τοῦτο δυνατὸν γενέσθαι, τί κωλύει τὸ αὐτὸ συμβῆναι καὶ κατὰ τὸ πᾶν; εἰ γὰρ ἐν μικρῷ κόσμῳ γίνεται, καὶ ἐν μεγάλῳ.

[4] *Part. An.* i. 1, 640, b, 22 sqq. concluding (641, a, 29): ὥστε καὶ οὕτως ἂν λεκτέον εἴη τῷ περὶ φύσεως θεωρητικῷ περὶ ψυχῆν μᾶλλον ἢ περὶ τῆς ὕλης, ὅσῳ μᾶλλον ἡ ὕλη δι' ἐκείνην φύσις ἐστὶν ἢ ἀνάπαλιν. c. 5, 645, b, 14: ἐπεὶ δὲ τὸ μὲν ὄργανον πᾶν ἕνεκά του, τῶν δὲ τοῦ σώματος μορίων ἕκαστον ἕνεκά του, τὸ δ' οὗ ἕνεκα πρᾶξίς τις,

judicious manager, gives to each the instrument it can use.[1] Instead, therefore, of deducing the spiritual from the corporeal, as the elder physicists had done, Aristotle takes the opposite path, describing the soul's life as the end and the body's life as the means. While Anaxagoras had said that man was the most rational being because he had hands, Aristotle denies any truth to this dictum unless it be reversed—man has hands because he is the most rational being; for the instrument must be fitted to its work, not the work to its instrument.[2] The nature of the instrument is not, indeed, a matter of indifference in respect to the result: anything cannot be made out of any substance or by any means;[3] but this does not negative the fact that the choice of the instrument depends upon the purpose in view.[4] It is perfectly obvious that it does in the case

φανερὸν ὅτι καὶ τὸ σύνολον σῶμα συνέστηκε πράξεώς τινος ἕνεκα πλήρους. . . . ὥστε καὶ τὸ σῶμά πως τῆς ψυχῆς ἕνεκεν, καὶ τὰ μόρια τῶν ἔργων πρὸς ἃ πέφυκεν ἕκαστον. *Metaph.* vii. 10, 1035, b, 14 sqq. *De An.* ii. 4; see p. 2, n. 3, *supra.*

[1] *Part. An.* iv. 10, 687, a, 10: ἡ δὲ φύσις ἀεὶ διανέμει, καθάπερ ἄνθρωπος φρόνιμος, ἕκαστον τῷ δυναμένῳ χρῆσθαι. *Ibid.* c. 8, 684, a, 28: ἡ δὲ φύσις ἀποδίδωσιν ἀεὶ τοῖς χρῆσθαι δυναμένοις ἕκαστον ἢ μόνως ἢ μᾶλλον. iii. 1, 661, b, 26 sqq.: of those organs which serve for purposes of defence or are indispensable to the support of life, ἕκαστα ἀποδίδωσιν ἡ φύσις τοῖς δυναμένοις χρῆσθαι μόνοις ἢ μᾶλλον, μάλιστα δὲ τῷ μάλιστα. Hence the female is usually either wholly or in part unprovided with defensive organs.

[2] *Part. An.* iv. 10, 687, a, 7–23, especially the words just after the passage quoted above: προσήκει γὰρ τῷ ὄντι αὐλητῇ δοῦναι μᾶλλον αὐλοὺς ἢ τῷ αὐλοὺς ἔχοντι προσθεῖναι αὐλητικήν· τῷ γὰρ μείζονι καὶ κυριωτέρῳ προσέθηκε τοὔλαττον, ἀλλ' οὐ τῷ ἐλάττονι τὸ τιμιώτερον καὶ μεῖζον . . . . τῷ οὖν πλείστας δυναμένῳ δέξασθαι τέχνας τὸ ἐπὶ πλεῖστον τῶν ὀργάνων χρήσιμον τὴν χεῖρα ἀποδέδωκεν ἡ φύσις.

[3] See pp. 9, n. 7, and 10, n. 1, *supra.*

[4] There is, therefore, no real inconsistency between the doctrine previously laid down and the statements, *Gen. An.* ii. 6, 744, a, 30, that man's intelligence affords proof of the εὐκρασία of the central organ of his life; *Part. An.* ii. 2, 648, a, 2 sqq. c. 4, 651, a, 12, that greater intelli-

of organic beings. The adjustment of means to end which prevails in nature here displays itself in its fullest perfection.[1] To them we may with most propriety apply the axiom that Nature always produces the best that was possible under the given circumstances.[2]

This working towards fixed ends begins to show itself in the nutrition and development of organisms. Nutrition is not a mere operation of warmth, as was supposed; warmth may be important in the process, but it is always the soul that regulates it and directs it to a certain definite result.[3] Nor can we adopt the theory suggested by Empedocles for explaining the growth of plants by saying that the fiery element tends upwards and the earthy downwards in their composition; if so,

gence is a consequence of thinner and cooler blood; *ibid.* iv. 10, 686, b, 22, that the meaner intelligence of animals, children, and dwarfs is to be explained on the ground of the earthliness and immobility of the organ which their souls must employ; *De Respir.* 13, 477, a 16, that warmer animals have nobler souls, and *De An.* ii. 9, 421, a, 22, that man excels all other creatures in the fineness of his sense of touch διὸ καὶ φρονιμώτατόν ἐστι τῶν ζῴων, and that among men those who are white, and therefore have a more delicate sensibility, are mentally more highly endowed (cf. also *Metaph.* i. 1, 980, b, 23). Mental activity may be phenomenally dependent upon certain conditions which in turn exist only for its sake: that which in reality is the primary and conditioning principle may appear to follow in time as a later and conditioned result; cf. *Part. An.* ii. i. 646, a, 24. Further consideration, however, reveals the logical difficulties in which we are thus involved. The soul's development is said on the one hand to be conditioned by the capabilites of its body, the character of the body on the other hand is conditioned by the requirements of the soul—which, then, is primary and conditioning? If the soul, why has it not a body which permits a higher development of its powers? If the body, how can it be itself treated as though it were the mere tool of the soul?

[1] *Meteor.* iv. 12; see i. 468, n. 5, *supra*.

[2] See the discussion, *supra*, i. p. 459 sqq. The statements there made refer for the most part principally to the organic nature.

[3] *De An.* ii. 4, 416, a, 9: δοκεῖ δέ τισιν ἡ τοῦ πυρὸς φύσις ἁπλῶς

what keeps the two together and prevents their separation?[1] The same applies to the structure of the organism. It is impossible to explain even the origin of organic creatures[2] on the supposition that their separate parts are formed and brought together by a blind and purposeless necessity, only those combinations surviving which succeed in producing from an aimless stream of matter a being adapted to an end and capable of life.[3] For chance produces only isolated and abnormal results. When, on the other hand, we are dealing with the normal adaptations of Nature we are forced to regard them as purposely designed by her from the beginning.[4] But this is precisely what we

αἰτία τῆς τροφῆς καὶ τῆς αὐξήσεως εἶναι. . . . τὸ δὲ συναίτιον μέν πώς ἐστιν, οὐ μὴν ἁπλῶς γε αἴτιον, ἀλλὰ μᾶλλον ἡ ψυχή. ἡ μὲν γὰρ τοῦ πυρὸς αὔξησις εἰς ἄπειρον, ἕως ἂν ᾖ τὸ καυστὸν, τῶν δὲ φύσει συνισταμένων πάντων ἐστὶ πέρας καὶ λόγος μεγέθους τε καὶ αὐξήσεως· ταῦτα δὲ ψυχῆς, ἀλλ' οὐ πυρὸς, καὶ λόγου μᾶλλον ἢ ὕλης. Cf. p. 14, n, 2, *inf.*; and upon αἴτιον and συναίτιον, *supra*, i. p. 360, n. 1, and p. 463, n. 1.

[1] *Ibid.* 415, b, 28 sqq.

[2] As Empedocles tries to do; see following note. We cannot suppose, however, that Empedocles (or any other of the pre-Aristotelian philosophers) expressed the theories of which he is chosen by Aristotle as the representative, in so general a sense as is here attributed to him.

[3] *Phys.* ii. 8, 198, b, 16, Aristotle starts the question: τί κωλύει τὴν φύσιν μὴ ἕνεκά του ποιεῖν μηδ' ὅτι βέλτιον, ἀλλ' ὥσπερ ὕει ὁ Ζεὺς &c. [see i. 471, *supra*] . . . ὥστε τί κωλύει οὕτω καὶ τὰ μέρη ἔχειν ἐν τῇ φύσει, οἷον τοὺς ὀδόντας ἐξ ἀνάγκης ἀνατεῖλαι τοὺς μὲν ἐμπροσθίους ὀξεῖς, ἐπιτηδείους πρὸς τὸ διαιρεῖν, τοὺς δὲ γομφίους πλατεῖς καὶ χρησίμους πρὸς τὸ λεαίνειν τὴν τροφὴν, ἐπεὶ οὐ τούτου ἕνεκα γενέσθαι, ἀλλὰ συμπεσεῖν. ὁμοίως δὲ καὶ περὶ τῶν ἄλλων μερῶν, ἐν ὅσοις δοκεῖ ὑπάρχειν τὸ ἕνεκά του. ὅπου μὲν οὖν ἅπαντα συνέβη ὥσπερ κἂν εἰ ἕνεκά του ἐγίνετο, ταῦτα μὲν ἐσώθη ἀπὸ τοῦ αὐτομάτου συστάντα ἐπιτηδείως· ὅσα δὲ μὴ οὕτως, ἀπώλετο καὶ ἀπόλλυται, καθάπερ Ἐμπεδοκλῆς λέγει τὰ βουγενῆ ἀνδρόπρωρα.

[4] Ἀδύνατον δὲ [Aristotle answers, *ibid.* 198, b, 34] τοῦτον ἔχειν τὸν τρόπον. ταῦτα μὲν γὰρ καὶ πάντα τὰ φύσει ἢ ἀεὶ οὕτω γίνεται ἢ ὡς ἐπὶ τὸ πολὺ, τῶν δ' ἀπὸ τύχης καὶ τοῦ αὐτομάτου οὐδέν. . . . εἰ οὖν ἢ ὡς ἀπὸ συμπτώματος δοκεῖ ἢ ἕνεκά του εἶναι, εἰ μὴ οἷόν τε ταῦτ' εἶναι μήτε ἀπὸ συμπτώματος μήτ' ἀπὸ ταὐτομάτου, ἕνεκά του ἂν εἴη. In further proof of design in nature, he adds: ἔτι ἐν ὅσοις

are doing in the case of a living being. What makes a living body is not the separate material elements, but their special and peculiar combination, the form of the whole to which they pertain.[1] We cannot explain its structure by the mere operation of elementary forces working in matter, but only by the operation of the soul, which employs these forces as instruments in giving form to matter.[2] Nature makes only those organs that are fitted for the purpose of each organism, and creates them in order, according to their several uses.[3] First she forms the parts on which the life and growth of the being depend ;[4] then the remaining most important parts

τέλος ἐστί τι, τούτου ἕνεκα πράττεται τὸ πρότερον καὶ τὸ ἐφεξῆς. οὐκοῦν ὡς πράττεται, οὕτω πέφυκε, καὶ ὡς πέφυκεν, οὕτω πράττεται ἕκαστον ἂν μή τι ἐμποδίζῃ. πράττεται δ' ἕνεκά του· καὶ πέφυκεν ἄρα τούτου ἕνεκα. Cf. i. 462, n. 2, *supra*.

[1] *Part. An.* i. 5, 645, a, 30: just as when we speak of a house or furniture, we mean, not the material of which it is made, but the ὅλη μορφή, so in the investigation of nature we speak περὶ τῆς συνθέσεως καὶ τῆς ὅλης οὐσίας, ἀλλὰ μὴ περὶ τούτων ἃ μὴ συμβαίνει χωριζόμενά ποτε τῆς οὐσίας αὐτῶν.

[2] *Gen. An.* ii. 4, 740, b, 12: ἡ δὲ διάκρισις γίγνεται τῶν μορίων [in the formation of the fœtus] οὐχ ὥς τινες ὑπολαμβάνουσι, διὰ τὸ πεφυκέναι φέρεσθαι τὸ ὅμοιον πρὸς τὸ ὅμοιον (and therefore as in elementary processes); for in that case homogeneous parts, flesh, bones, &c., would unite in separate masses; ἀλλ' ὅτι τὸ περίττωμα τὸ τοῦ θήλεως δυνάμει τοιοῦτόν ἐστιν οἷον φύσει τὸ ζῷον, καὶ ἔνεστι δυνάμει τὰ μόρια ἐνεργείᾳ δ' οὐθέν. . . καὶ ὅτι τὸ ποιητικὸν καὶ τὸ παθητικὸν, ὅταν θίγωσιν, . . εὐθὺς τὸ μὲν ποιεῖ τὸ δὲ πάσχει. . . ὥσπερ δὲ τὰ ὑπὸ τῆς τέχνης γινόμενα γίνεται διὰ τῶν ὀργάνων, ἔστι δ' ἀληθέστερον εἰπεῖν διὰ τῆς κινήσεως αὐτῶν, αὕτη δ' ἐστὶν ἡ ἐνέργεια τῆς τέχνης, ἡ δὲ τέχνη μορφὴ τῶν γιγνομένων ἐν ἄλλῳ, οὕτως ἡ τῆς θρεπτικῆς ψυχῆς δύναμις, ὥσπερ καὶ ἐν αὐτοῖς τοῖς ζῴοις καὶ τοῖς φυτοῖς ὕστερον ἐκ τῆς τροφῆς ποιεῖ τὴν αὔξησιν, χρωμένη οἷον ὀργάνοις θερμότητι καὶ ψυχρότητι (ἐν γὰρ τούτοις ἡ κίνησις ἐκείνης καὶ λόγῳ τινὶ ἕκαστον γίνεται) οὕτω καὶ ἐξ ἀρχῆς συνίστησι τὸ φύσει γιγνόμενον.

[3] *Ibid.* ii. 6, 744, a, 36: ἐπεὶ δ' οὐθὲν ποιεῖ περίεργον οὐδὲ μάτην ἡ φύσις, δῆλον ὡς οὐδ' ὕστερον οὐδὲ πρότερον. ἔσται γὰρ τὸ γεγονὸς μάτην ἢ περίεργον.

[4] In the lower animals the heart or the organ that corresponds to it; *Gen. An.* ii. 1, 735, a, 23.

of the organism; and lastly the instruments which it employs for special purposes.[1] The nutritive soul is developed first, as forming the common basis of all life; and next the several functions of the soul by which each higher organism raises itself above that which precedes it in the scale of being. First comes *a* living being, and next some *special* sort of being.[2] In obedience to the same law the organism is dissolved in the reverse order. That which life can least dispense with dies last, the less vital organs first; so that Nature works round in a circle to her starting point.[3] All parts and functions of the living creature exhibit the same proofs of contrivance, and can only be explained as the product of design. Accordingly all Aristotle's researches into the corporeal nature of animals are governed by this view. The essential and decisive causes are always final causes,[4] and whatever leads in the ordinary course of nature to a definite end must have existed for that end.[5] He tries to prove that every organ is just what it must have been in order to fulfil its purpose in the best possible way according to the

[1] *Gen. An.* ii. 6, 742, a, 16–b, 6, c. 1, 734, a, 12, 26.

[2] *Gen. An.* ii. 3, 736, a, 27–b, 14 (cf. 737, b, 17, c. 1, 735, a, 4 sqq.). As the inhabitant of a material body, the soul may be said to exist potentially in the seed. In the evolution of the living being the nutritive soul comes first, next the sensitive and rational: first comes a *ζῷον*, then a definite *ζῷον*, *e.g.* a horse or a man. ὕστερον γὰρ γίνεται τὸ τέλος, τὸ δ' ἴδιόν ἐστι τὸ ἑκάστου τῆς γενέσεως τέλος.

[3] *Ibid.* c. 5, 741, b, 18: that the heart is the central organ is seen at death; ἀπολείπει γὰρ τὸ ζῆν ἐντεῦθεν τελευταῖον, συμβαίνει δ' ἐπὶ πάντων τὸ τελευταῖον γινόμενον πρῶτον ἀπολείπειν, τὸ δὲ πρῶτον τελευταῖον, ὥσπερ τῆς φύσεως διαυλοδρομούσης καὶ ἀνελιττομένης ἐπὶ τὴν ἀρχὴν ὅθεν ἦλθεν. ἔστι γὰρ ἡ μὲν γένεσις ἐκ τοῦ μὴ ὄντος εἰς τὸ ὄν, ἡ δὲ φθορὰ ἐκ τοῦ ὄντος πάλιν εἰς τὸ μὴ ὄν.

[4] Cf. i. 459, sqq. *supra*.

[5] Cf. p. 17, *infra*.

means at hand.[1] He points out how every animal is provided with organs adapted to its mode of life, or how the common organs of a tribe are modified to meet its special needs.[2] Nor does he neglect the interdependence of the different members: distinguishing the principal organs which directly serve to fulfil the end of life, from those which are added for their protection and maintenance;[3] and remarking that Nature always affords the strongest protection to the noblest and the weakest parts,[4] that, where one organ is not equal to its task, she makes or modifies another for the purpose,[5] and that she places organs of opposite character near one another, in order that each may temper and supplement the action of the other.[6] He sees in the artistic instincts of animals an obvious

[1] Proofs of this, the most important of which will call for future discussion, are given throughout the whole work *De Part. An.*, and in many passages of Aristotle's other zoological and anthropological works.

[2] Thus the elephant, being not only a land-animal, but leading also an amphibious life in morasses, is provided with a proboscis that it may breathe more easily under water; *Part. An.* ii. 16, 658, b, 33 sqq. In like manner the form of birds' beaks depends upon the nature of their food, as is shown (*ibid.* iii. 1, 662, b, 1, sqq. iv. 12, 693, a, 10 sqq.) in the case of birds of prey, the woodpecker, the raven, grain- and insect-eaters, water- and moor-fowl. Dolphins, again, and sharks (*ibid.* iv. 13, 696, b, 24) have the mouth in the upper part of their bodies to enable other animals to escape from them more easily, and to prevent them from doing injury to themselves by their voracity.

[3] The flesh, for example, is the principle organ of sense-perception; bones, on the other hand, nerves, veins, skin, hair, nails, &c., exist merely for its sake, as is shown *Part. An.* ii. 8.

[4] ZELLER, *Ph. d. Gr.* ii. 14, 658, b, 2 sqq., iii. 11. 673, b, 8, iv. 10, 690, b, 9.

[5] *Ibid.* iv. 9, 685, a, 30.

[6] *Ibid.* ii. 7, 652, a, 31: ἀεὶ γὰρ ἡ φύσις μηχανᾶται πρὸς τὴν ἑκάστου ὑπερβολὴν βοήθειαν τὴν τοῦ ἐναντίου παρεδρίαν, ἵνα ἀνισάζῃ τὴν θατέρου ὑπερβολὴν θάτερον. b, 16: ἐπεὶ δ' ἅπαντα δεῖται τῆς ἐναντίας ῥοπῆς, ἵνα τυγχάνῃ τοῦ μετρίου καὶ τοῦ μέσου: thus the head counterbalances the heart.

example of unconscious contrivance in Nature.[1] Nor does he forget the influence of necessity, which here, as elsewhere, cooperates with Nature in the realisation of her designs.[2] Indeed, he expressly requires observers of nature to make use of both causes in their explanations.[3] Still he holds fast to the belief that physical causes are only means employed by Nature for her ends, and that their necessity is only conditional;[4] nor does he cease to marvel at the wisdom with which Nature makes use of the materials suited to her purposes, and overcomes the opposition of such as are antagonistic. Like a good housewife, she employs the dregs and refuse of animal life for beneficial purposes, and suffers nothing to be wasted.[5] She turns everything to the best possible account;[6] if she can make one organ

[1] *Phys.* ii. 8, 199, a, 20: μάλιστα δὲ φανερὸν ἐπὶ τῶν ζῴων τῶν ἄλλων, ἃ οὔτε τέχνῃ οὔτε ζητήσαντα οὔτε βουλευσάμενα ποιεῖ. ὅθεν διαποροῦσί τινες πότερον νῷ ἤ τινι ἄλλῳ ἐργάζονται οἵ τ' ἀράχναι καὶ οἱ μύρμηκες καὶ τὰ τοιαῦτα. κατὰ μικρὸν δ' οὕτω προϊόντι καὶ ἐν τοῖς φυτοῖς φαίνεται τὰ συμφέροντα γινόμενα πρὸς τὸ τέλος, οἷον τὰ φύλλα τῆς τοῦ καρποῦ ἕνεκα σκέπης. ὥστ' εἰ φύσει τε ποιεῖ καὶ ἕνεκά του ἡ χελιδὼν τὴν νεοττιὰν καὶ ὁ ἀράχνης τὸ ἀράχνιον, καὶ τὰ φυτὰ τὰ φύλλα ἕνεκα τῶν καρπῶν καὶ τὰς ῥίζας οὐκ ἄνω ἀλλὰ κάτω ἕνεκα τῆς τροφῆς, φανερὸν ὅτι ἔστιν ἡ αἰτία ἡ τοιαύτη ἐν τοῖς φύσει γινομένοις καὶ οὖσιν. Cf. i. 463, n. 1.

[2] See i. 360, n. 1, *supra*.

[3] *Ibid.* and *Part. An.* i. 1, 643, a, 14: δύο τρόποι τῆς αἰτίας καὶ δεῖ λέγοντας τυγχάνειν μάλιστα μὲν ἀμφοῖν, &c. (Cf. PLATO, *Tim.* 46, C; *Div.* i. 642, 6). In discussing individual parts of the body he frequently gives both sides in succession, *e.g.* *Part.* ii. 14, 658, b, 2: man has thicker hair than any other animal, ἐξ ἀνάγκης μὲν διὰ τὴν ὑγρότητα τοῦ ἐγκεφάλου καὶ διὰ τὰς ῥαφάς, . . . ἕνεκεν δὲ βοηθείας, ὅπως σκεπάζωσι, &c.

[4] The proofs have already been given, i. 360, n. 1, *supra*.

[5] See i. 465, n. 2, *supra*.

[6] Thus, for example (*Part. An.* iii. 14, 675, b, 17 sqq.), the intestines are coiled tightly together, ὅπως ταμιεύηται ἡ φύσις καὶ μὴ ἀθρόος ᾖ ἡ ἔξοδος τοῦ περιττώματος, especially in those animals which are destined for a frugal manner of life. The same thought had already been expressed in PLATO, *Tim.* 72, E.

serve, she does not give an animal several for the same function;[1] if she needs materials for strengthening one member, she despoils another which appears less indispensable;[2] if she can achieve several objects by one

[1] Thus Aristotle explains (*Part. An.* iii. 2) that different animals are provided with different means of defence, some with horns, others with claws, some with size, others with fleetness, others again with repulsive excrement; ἅμα δ' ἱκανὰς καὶ πλείους βοηθείας οὐ δέδωκεν ἡ φύσις τοῖς αὐτοῖς. Again, *ibid.* iv. 12, 694, a, 12, he remarks that birds which have a spur are not endowed with bent talons also; αἴτιον δ' ὅτι οὐδὲν ἡ φύσις ποιεῖ περίεργον. Again, *Respir.* 10, 476, a, 6 sqq.: gills and lungs never exist together, ἐπεὶ μάτην οὐδὲν ὁρῶμεν ποιοῦσαν τὴν φύσιν, δυοῖν δ' ὄντοιν θάτερον ἂν ἦν μάτην (just before he says: ἓν δ' ἐφ' ἓν ὄργανον χρήσιμον). And again, *Part.* iii. 14, 674, a, 19 sqq.: animals which have more perfect masticating organs (i.e. ἀμφώδοντα) are supplied with a simpler digestive apparatus: those which are defective in the former respect, on the other hand, have several stomachs; after enumerating several species of animals which belong to the former class, he proceeds, 674, a, 28: those animals which, like the camel, require more than one stomach on account of their great size and the coarseness of their food, form an exception to the rule; the teeth and stomach of the camel resemble those of horned animals διὰ τὸ ἀναγκαιότερον εἶναι αὐτῇ τὴν κοιλίαν ἔχειν τοιαύτην ἢ τοὺς προσθίους ὀδόντας, it can do without the latter ὡς οὐδὲν ὄντας προὔργου.

[2] *Gen. An.* iii. 1, 749, b, 34: thin animals have a greater power of procreation; ἡ γὰρ εἰς τὰ κῶλα τροφὴ τρέπεται τοῖς τοιούτοις εἰς περίττωμα σπερματικόν· ὃ γὰρ ἐκεῖθεν ἀφαιρεῖ ἡ φύσις, προστίθησιν ἐνταῦθα. *Part. An.* ii. 14, 658, a, 31: in long-tailed animals, the hairs of the tail are shorter, in short-tailed, longer, and the same is true of the other parts of the body; πανταχοῦ γὰρ ἀποδίδωσι [ἡ φύσις] λαβοῦσα ἑτέρωθεν πρὸς ἄλλο μόριον, cf. *ibid.* c. 9, 655, a, 27: ἅμα δὲ τὴν αὐτὴν ὑπεροχὴν εἰς πολλοὺς τόπους ἀδυνατεῖ διανέμειν ἡ φύσις. For further explanations *v.* Meyer (to whom I gratefully acknowledge my obligations for much of this section), *Arist. Thierk.* 468: 'Nature employs the earthy refuse either for horns or double rows of teeth' (see *Part. An.* iii. 2, 663, b, 31, 664, a, 8—or, as in the case of the camel, for a hard palate, *ibid.* c. 14, 674, b, 2). 'The bear, which has a hairy body, must be content with a stunted tail (*ibid.* ii. 14, 658, a, 36). In the case of mammals, the earthy material has been employed for their tails, and accordingly, unlike man, they have no flesh upon their legs (*ibid.* iv. 10, 689, b, 21). Sharks, again, require this earthy material to give their skins the proper thickness, and accordingly have mere gristle for

organ, she makes it do the work;[1] although, when this arrangement will not serve, she is no niggard in her contrivances:[2] of the different materials which she has at her disposal she employs the best upon the nobler and the worse upon the less important members.[3] Even in the cases where one cannot attribute any definite utility to certain structures, they are not without a design; for Aristotle thinks that their end may be

their skeletons (*ibid.* ii. 9, 655, a, 23).' Meyer quotes further examples from *Part. An.* ii. 13, 657, b, 7, iv. 9, 685, a, 24. Cf. also *Part. An.* iii. 2, 663, a, 31.

[1] Thus the mouth, besides the common purpose of eating, serves various other ends in the various animals, and is thus variously formed; ἡ γὰρ φύσις . . . τοῖς κοινοῖς πάντων μορίοις εἰς πολλὰ τῶν ἰδίων καταχρῆται . . . ἡ δὲ φύσις πάντα συνήγαγεν εἰς ἕν, ποιοῦσα διαφορὰν αὐτοῦ τοῦ μορίου πρὸς τὰς τῆς ἐργασίας διαφοράς. (*Part. An.* iii. 1, 662, a, 18, cf. *Respir.* c. 11 *init.*) Likewise the tongue (*Respir. ibid.*; *Part.* ii. 17). The hand (*Part.* iv. 10, 687, a, 19) is οὐχ ἓν ὄργανον ἀλλὰ πολλά· ἔστι γὰρ ὡσπερεὶ ὄργανον πρὸ ὀργάνων (cf. *De An.* iii. 8, 432, a, 1); it is (b, 2) καὶ ὄνυξ καὶ χηλὴ καὶ κέρας καὶ δόρυ καὶ ξίφος καὶ ἄλλο ὁποιονοῦν ὅπλον καὶ ὄργανον, &c.; and similarly the breasts of women, *Part. An.* iv. 10, 688, a, 19 sqq., the trunk of the elephant, *ibid.* ii. 16, 659, a, 20, and the tails of animals, *ibid.* iv. 10, 690, a, 1 (among other passages).

[2] *Part. An.* iv. 6, 683, a, 22: ὅπου γὰρ ἐνδέχεται χρῆσθαι δυσὶν ἐπὶ δύ' ἔργα καὶ μὴ ἐμποδίζειν πρὸς ἕτερον, οὐδὲν ἡ φύσις εἴωθε ποιεῖν ὥσπερ ἡ χαλκευτικὴ πρὸς εὐτέλειαν ὀβελισκολίχνιον· (on this GÖTTLING, *De Machæra Delphica*, Ind. lect. Jen. 1856, p. 8); ἀλλ' ὅπου μὴ ἐνδέχεται καταχρῆται τῷ αὐτῷ ἐπὶ πλείω ἔργα. *Polit.* i. 2, 1252, b, 1: οὐθὲν γὰρ ἡ φύσις ποιεῖ τοιοῦτον οἷον χαλκοτύποι τὴν Δελφικὴν μάχαιραν [GÖTTLING, *ibid.*; ONCKEN, *Staatsl. d. Ar.* ii. 25, who both fail, however, to give a complete account of the matter] πενιχρῶς, ἀλλ' ἓν πρὸς ἕν· οὕτω γὰρ ἂν ἀποτελοῖτο κάλλιστα τῶν ὀργάνων ἕκαστον, μὴ πολλοῖς ἔργοις ἀλλ' ἑνὶ δουλεῦον. MEYER, *Arist. Thierk.* 470, rightly remarks that these statements are inconsistent with the principles of the parsimony of nature as previously laid down, and even although we grant that it is possible to find, with Aristotle, a basis of reconciliation in the phrase ὅπου ἐνδέχεται, we cannot deny that there is a certain arbitrariness in the way in which it is applied.

[3] *Gen. An.* ii. 6, 744, b, 11 sqq., where Nature's management is compared in this respect with that of a household in which the free members receive the best food, the servants a coarse quality, and the domestic animals the worst.

fulfilled in the very symmetry and perfection of their form,[1] and that this explains why many animals have organs, or at least the indications of them, which they do not use.[2] It is only where he cannot discover the least trace of purpose that our philosopher can bring himself to explain a phenomenon by chance or blind necessity.[3]

[1] He treats it, for example, as a universal law that all the organs should be in pairs (διφυῆ), seeing that the body has a right and a left, a front and a back, an upper and a lower (*Part. An.* iii. 7 *init.* c. 5, 667, b, 31 sqq.). Even where to all appearance there is only a single organ, he exerts himself to prove that it is double (*ibid.* 669, b, 21: διόπερ καὶ ὁ ἐγκέφαλος βούλεται διμερὴς εἶναι πᾶσι καὶ τῶν αἰσθητηρίων ἕκαστον. κατὰ τὸν αὐτὸν δὲ λόγον ἡ καρδία ταῖς κοιλίαις. Likewise the lungs). Another typical law is that the nobler parts, where it is possible, should be in the upper part, in front and on the right as the better position (*Part. An.* iii. 3, 665, a, 23, b, 20, c. 5, 667, b, 34, cf. c. 7, 670, b, 30, c. 9, 672, a, 24, c. 10, 672, b, 19 sqq.); so, likewise, that the locomotive impulse (the ἀρχὴ) should proceed for the same reason from this quarter (*Ingr. An.* 5, 706, b, 11); cf. Ch. X. on Animals. The same æsthetic conception of Nature's contrivances is expressed in the observation, *Part. An.* ii. 14, 658, a, 15 sqq., that men are better protected in front than behind, the front being the nobler (τιμιωτέρα) side, and therefore demanding stronger defences; and in l. 30 of the same passage, where the hairs of the tail of the horse and other animals are described as merely ornamental.

[2] The hind, while it has no horns, has teeth like the stag, because it belongs to a horned class; and similarly in certain species of crabs the female has claws which belong properly only to the male, ὅτι ἐν τῷ γένει εἰσι τῷ ἔχοντι χηλάς (*Part. An.* iii. 2, 664, a, 3, iv. 8, 684, a, 33). Again, spleen, which is a necessity only to viviparous animals, and is therefore more strongly developed in these, is yet found to exist in all (πάμμικρον ὥσπερ σημείου χάριν) as a kind of counterpoise to the liver, which is on the right side of the body and therefore requires something to correspond to it on the left, ὥστ' ἀναγκαῖον μέν πως, μὴ λίαν δ' εἶναι πᾶσι τοῖς ζῴοις (*Part. An.* iii. 7, 669, b, 26 sqq. c 4, 666, a, 27, cf. *H. An.* ii. 15, 506, a, 12). Similarly the monkey, belonging as it does to the four-footed races, is endowed with a tail ὅσον σημείου χάριν, *H. An.* ii. 8, 502, b, 22, c. 1, 498, b, 13. Cf. MEYER, p. 464 sq.; EUCKEN, *Meth. d. arist. Forsch.* 104 sqq., 91.

[3] A purposeless creation of this kind (περίττωμα) he finds in the gall (*Part. An.* iv. 2, 677, a,

This prevalence of design in nature shows itself, as we have seen before (i. 466 sqq.), in a gradual progression, a continual process of development. The various functions of the soul and life are not shared by all living creatures in equal perfection, but different forms of animation, and different parts of the soul, may be distinguished, which determine the gradations of animate life. Plants are confined to nutrition and propagation; the nutritive soul alone is active in them.[1] Beasts add to this the sensitive soul, for sensation is the most universal mark of distinction between beasts and plants.[2] The lowest form of sensation, common to all animals, is the sense of touch; here begins the feeling of pain and pleasure, and the appetites, among which

11 sqq.; see i. 361, n. 1, *supra*). Upon necessity and chance, p. 359 sqq. *supra*.

[1] *De An.* ii. 2 (see i. 511, n. 2, *supra*). *Ibid.* 413, b, 7: θρεπτικὸν δὲ λέγομεν τὸ τοιοῦτον μόριον τῆς ψυχῆς οὗ καὶ τὰ φυτὰ μετέχει. c. 3 *init.* c. 4, 415, a, 23; ἡ γὰρ θρεπτικὴ ψυχὴ καὶ τοῖς ἄλλοις ὑπάρχει, καὶ πρώτη καὶ κοινοτάτη δύναμίς ἐστι ψυχῆς, καθ' ἣν ὑπάρχει τὸ ζῆν ἅπασιν. ἧς ἐστὶν ἔργα γεννῆσαι καὶ τροφῇ χρῆσθαι. *Hist. An.* viii. 1, 588, b, 24; *Gen. An.* i. 23, 731, a, 24, procreation alone is mentioned as the peculiar function of the vegetable sense; and *De An.* ii. 4, 416, b. 23, it is said: ἐπεὶ δὲ ἀπὸ τοῦ τέλους ἅπαντα προσαγορεύειν δίκαιον, τέλος δὲ τὸ γεννῆσαι οἷον αὐτὸ, εἴη ἂν ἡ πρώτη ψυχὴ γεννητικὴ οἷον αὐτό. On the other hand, *Gen. An.* ii. 4, 740, b, 34 sqq. (cf. c. 1, 735, a, 16), shows that it is one and the same living energy which first forms and afterwards nourishes the body, but that the former is the more important function; εἰ οὖν αὕτη ἐστὶν ἡ θρεπτικὴ ψυχή, αὕτη ἐστὶ καὶ ἡ γεννῶσα· καὶ τοῦτ' ἐστὶν ἡ φύσις ἡ ἑκάστου, ἐνυπάρχουσα καὶ ἐν φυτοῖς καὶ ἐν ζῴοις πᾶσιν.

[2] *De An.* ii. 2, 413, b, 1: τὸ μὲν οὖν ζῆν διὰ τὴν ἀρχὴν ταύτην ὑπάρχει τοῖς ζῶσι, τὸ δὲ ζῷον διὰ τὴν αἴσθησιν πρώτως· καὶ γὰρ τὰ μὴ κινούμενα μηδ' ἀλλάττοντα τόπον ἔχοντα δ' αἴσθησιν ζῷα λέγομεν καὶ οὐ ζῆν μόνον. *De Sensu*, c. 1, 436, b, 10; *De Juvent.* c. 1, 467, b, 18, 27; *Part. An.* ii. 10, 655, a, 32, 656, b, 3; iv. 5, 681, a, 12; *Ingr. An.* c. 4, 705, a, 26 sqq. b, 8; *Gen. An.* i. 23, 731, a, 30; ii. 1, 732, a, 11. Most of these passages expressly notice the distinction between the ζῶν and the ζῷον.

the appetite for food appears first.[1] One division of living creatures combines with sensation the power of locomotion, which also belongs to the bestial soul.[2] Lastly, besides nutritive and sensitive life, man possesses Reason, the third and highest faculty of the soul.[3] The soul exists in no other form than those which we have just described.[4] These themselves, however, are so related to each other that the higher cannot exist without the lower.[5] Animal life exhibits

[1] *De An.* ii. 2, 413, b, 4 sqq. 21 sqq. c. 3, 414, b, 1–16, 415, a, 3 sqq. iii. 12, 434, b, 11 sqq. c 13, 435, b, 17 sqq.; *De Sensu*, 1, 436, b, 10–18; *Part. An.* ii. 17, 661, a, 6; *H. An.* i. 3, 489, a, 17; *De Somno*, 1, 454, b, 29, c. 2 *init.* In these passages Aristotle sometimes mentions ἀφὴ alone, sometimes ἀφὴ καὶ γεῦσις, as the property of all animals, but the apparent inconsistency is explained by the fact that Aristotle regarded the sense taste as a form of touch; *De Sensu*, 2, 438, b, 30. *De An.* ii. 9, 421, a, 19; ii. 10 *init.* iii. 12, 434, b, 18.

[2] *De An.* ii. 3, 414, b, 16.

[3] *Ibid.* ii. 3, 414, b, 18 (cf. iii. 3, 427, b, 6; *Gen. An.* i. 23, 731, a, 30 sqq.): ἑτέροις δὲ [τῶν ζῴων ὑπάρχει] καὶ τὸ διανοητικόν τε καὶ νοῦς, οἷον ἀνθρώποις καὶ εἴ τι τοιοῦτον ἕτερόν ἐστιν ἢ καὶ τιμιώτερον. On the latter part of this observation see the discussion upon the different kinds of living beings *infra*.

[4] *De An.* ii. 3, 414, b, 19: just as there is no figure which is not either triangular, quadrangular, or with some other number of angles, so there is no soul which is not one or other of the ψυχαὶ mentioned.

[5] *Ibid.* 414, b, 28: παραπλησίως δ' ἔχει τῷ περὶ τῶν σχημάτων καὶ τὰ κατὰ ψυχήν· ἀεὶ γὰρ ἐν τῷ ἐφεξῆς ὑπάρχει δυνάμει τὸ πρότερον ἐπί τε τῶν σχημάτων καὶ ἐπὶ τῶν ἐμψύχων, οἷον ἐν τετραγώνῳ μὲν τρίγωνον ἐν αἰσθητικῷ δὲ τὸ θρεπτικόν . . . ἄνευ μὲν γὰρ τοῦ θρεπτικοῦ τὸ αἰσθητικὸν οὐκ ἔστιν· τοῦ δ' αἰσθητικοῦ χωρίζεται τὸ θρεπτικὸν ἐν τοῖς φυτοῖς. πάλιν δ' ἄνευ μὲν τοῦ ἁπτικοῦ τῶν ἄλλων αἰσθήσεων οὐδεμία ὑπάρχει, ἁφὴ δ' ἄνευ τῶν ἄλλων ὑπάρχει . . . καὶ τῶν αἰσθητικῶν δὲ τὰ μὲν ἔχει τὸ κατὰ τόπον κινητικόν, τὰ δ' οὐκ ἔχει. τελευταῖον δὲ καὶ ἐλάχιστα λογισμὸν καὶ διάνοιαν· οἷς μὲν γὰρ ὑπάρχει λογισμὸς τῶν φθαρτῶν [to the ζῷα ἄφθαρτα, *i.e.* the stars, a pure νοῦς belongs], τούτοις καὶ τὰ λοιπὰ πάντα, οἷς δ' ἐκείνων ἕκαστον, οὐ πᾶσι λογισμός. ἀλλὰ τοῖς μὲν οὐδὲ φαντασία, τὰ δὲ ταύτῃ μόνῃ ζῶσιν. περὶ δὲ τοῦ θεωρητικοῦ νοῦ ἕτερος λόγος (on this see *infra*). *Ibid.* c. 2, 413, a, 31, with regard to the θρεπτικόν: χωρίζεσθαι δὲ τοῦτο μὲν τῶν ἄλλων δυνατόν, τὰ δ' ἄλλα τούτου ἀδύνατον ἐν τοῖς θνητοῖς. Cf. i. 5 *fin.* *De Somno*, 1, 454, a, 11. *De Juvent.* 1, 467, b, 18 sqq.

a developing scale, in which each successive step includes all that went before. Plato's doctrine of the parts of the soul is thus applied to all animate existence, without violence to the general conception of its originator, though with important modifications of detail,[1] and we are enabled to embrace all natural species

[1] Aristotle objects, indeed (*De An.* iii. 9, 10, 432, a, 22 sqq. 433, a, 31 sqq.), to Plato's threefold division, on the ground that if we make the functions and faculties of the soul our principle of division we have far more than three parts, for the difference between the *θρεπτικὸν*, *αἰσθητικὸν*, *φανταστικὸν*, *νοητικὸν*, *βουλευτικὸν*, *ὀρεκτικὸν* is wider than between the *ἐπιθυμητικὸν* and *θυμικὸν*, and asks, *De An.* i. 5, 411, b, 5, in view of it: *τί οὖν ποτε συνέχει τὴν ψυχὴν εἰ μεριστὴ πέφυκεν;* it cannot be the body, for it is rather the soul which holds the body together; if, on the other hand, it be said that it is an incorporeal force, then this is the proper soul. But the question immediately recurs, is this simple or manifold? If the former, why cannot the soul itself be so just as well? If the latter, then for the parts of the *συνέχον* another *συνέχον* must be sought, and so on *ad infinitum*. We should thus finally be forced to suppose that each part of the soul resides in a particular part of the body, which is obviously not the case either with respect to the reason, which has no bodily organ corresponding to it at all, nor in respect of the lower principle of life, which, in the case of those animals and plants which survive being cut in pieces, lives on in each of the parts. Nevertheless, Aristotle himself speaks of parts of the soul (see p. 21, n. 1, *supra*; *De Vita*, i. 467, b, 16), and although he tries more fully to preserve the unity of its life amid the multiplicity of parts, he cannot be said to have been any more successful than Plato in this endeavour, nor does *νοῦς* bear any closer relation in his theory to the lower elements of the soul than does the immortal part in Plato's. His departure from Plato, accordingly, does not seem to be so important in principle. He differs from him partly in his account of different forms of animal life, but Plato, no less than he, assigns the lowest of the three parts into which he divides the soul to plants, the middle one to beasts, and holds that the higher part presupposes the lower but not *vice versa*; see *Div.* i. p. 714. The chief difference between the philosophers is in their respective starting points: while Plato begins his investigation into the nature and parts of the soul from the ethical side, Aristotle approaches it from the side of natural science. On the other hand, STRÜMPELL (*Gesch. d. theor. Phil.* 324 sqq.), as BRANDIS has pointed out, ii. b, 1168 sq., goes too far in saying that Aristotle attributes to one and the same being not only different

from the lowest to the highest in one comprehensive view as concentrated and progressive manifestations of the same life.

This progressive development of animal life corresponds to the actual fact, which Aristotle had no doubt observed, and which had led him in the first instance to his theory, that all organic nature exhibits a steady progress from more imperfect and defective productions to richer and fuller forms of life. 'Nature,' he says, 'makes so gradual a transition from the inanimate to the animate kingdom, that the boundary lines which separate them and the position of the intermediate are rendered indistinct and doubtful. Next to the inanimate kingdom comes that of Plants; and here we not only distinguish greater and less degrees of vitality subsisting among individuals, but the whole tribe seems animate when compared with inorganic substances, inanimate when compared with animals. Again, the transition from plants to animals is so gradual that many marine creatures leave us in doubt whether they are animals or vegetables, since they

faculties or parts of the soul but different souls, to man four, to beasts three (counting the sensitive and the motive principles as two). Aristotle speaks, indeed, of a *ψυχὴ θρεπτικὴ, αἰσθητικὴ, λογικὴ*, and of different *ψυχαὶ* (see *e.g.* preceding page; *De Vita*, 3, 469, a, 24), but he does not mean that several souls exist together in an individual as so many separate beings; he even defines the relation of these so-called *ψυχαὶ* to one another in the distinctest manner as one of comprehension, the nutritive soul being contained in the sensitive, and the sensitive in the rational, just as the triangle is contained in the quadrangle (see preceding note), so that an animal, for instance, can no more be said to contain two souls than a quadrangle can be said to contain two kinds of figures. If he fails, as a matter of fact, perfectly to preserve the unity of the soul throughout (see end of Ch. XII.), we are not on this account justified in denying that he attempted to do so.

adhere to the ground, and cannot live when separated from it. Indeed, the whole tribe of *Ostreaceæ*, when compared with locomotive animals, resemble vegetables.' The same may be said about sensation, physical structure, mode of life, propagation, the rearing of their young, &c.: in all of these respects we notice a gradual progression of development.[1] The continuity of this order brings into play the law of Analogy, the presence of which Aristotle takes some trouble to demonstrate in the sphere of organic structures and their vital functions. Analogy, as we have shown before,[2] is the bond which unites different genera; in organic nature, as elsewhere, it transcends generic differences, and where no real similarity of kind is possible, produces resemblance.[3] This analogy may be

[1] *Hist. An.* viii. 1, 588, b, 4 sqq. where detailed proof is given; *Part. An.* iv. 5, 681, a, 12, where, in speaking of zoophytes and the differences which are to be observed amongst them, he remarks: ἡ γὰρ φύσις μεταβαίνει συνεχῶς ἀπὸ τῶν ἀψύχων εἰς τὰ ζῷα διὰ τῶν ζώντων μὲν οὐκ ὄντων δὲ ζῴων οὕτως ὥστε δοκεῖν πάμπαν μικρὸν διαφέρειν θατέρου θάτερον τῷ σύνεγγυς ἀλλήλοις.

[2] I. 272, n. 2, *supra*. With what follows cf. MEYER, *Arist. Thierk.* 334 sqq. 103 sq.

[3] *Part. An.* i. 4, 644, a, 14. Why are not water and winged animals included under one name? ἔστι γὰρ ἔνια πάθη κοινὰ καὶ τούτοις καὶ τοῖς ἄλλοις ζῴοις ἅπασιν. ἀλλ' ὅμως ὀρθῶς διώρισται τοῦτον τὸν τρόπον. ὅσα μὲν γὰρ διαφέρει τῶν γενῶν καθ' ὑπεροχὴν καὶ τὸ μᾶλλον καὶ τὸ ἧττον, ταῦτα ὑπέζευκται ἑνὶ γένει, ὅσα δ' ἔχει τὸ ἀνάλογον χωρίς. Two kinds of birds differ from one another by the size, for instance, of their wings; birds and fish, on the other hand, τῷ ἀνάλογον· ὃ γὰρ ἐκείνῳ πτερὸν, θατέρῳ λεπίς. Analogies of this kind are found in almost all animals: τὰ γὰρ πολλὰ ζῷα ἀνάλογον ταὐτὸ πέπονθεν. Similarly in the following passage, 644, b, 7 sqq. a contrast is drawn between differences which exist within the same genus, *e.g.* between large and small, soft and hard, smooth and rough animals, and those which permit us to trace only general analogies. To the same effect, c. 5, 645, b, 4: πολλὰ κοινὰ πολλοῖς ὑπάρχει τῶν ζῴων, τὰ μὲν ἁπλῶς, οἷον πόδες πτερὰ λεπίδες, καὶ πάθη δὴ τὸν αὐτὸν τρόπον τούτοις, τὰ δ' ἀνάλογον. λέγω δ' ἀνάλογον, ὅτι τοῖς μὲν ὑπάρχει πλεύμων, τοῖς δὲ πλεύμων μὲν οὔ, ὃ δὲ τοῖς ἔχουσι πλεύ-

observed in the most different quarters. In place of blood, bloodless animals have certain humours which correspond to it;[1] and this is also the case with flesh.[2] Molluscs, being without fat, are provided with an analogous substance.[3] Cartilage and gristle correspond to bones in snakes and fish, and in the lower animals their place is supplied by shells, &c., which serve the same purpose of supporting the body.[4] The hair of quadrupeds answers to the feathers of birds, the scales of fishes, and the mail of oviparous land animals[5]—the teeth of beasts to the bills of birds.[6] Instead of a heart, bloodless animals have a similar central organ,[7] and instead of a brain, something like one.[8] Gills take the place of lungs in fishes, and they inhale water instead of air.[9] Roots perform the same office for vegetables as heads, or rather mouths, for animals, and

*μονα, ἐκείνοις ἕτερον ἀντὶ τούτου· καὶ τοῖς μὲν αἷμα, τοῖς δὲ τὸ ἀνάλογον τὴν αὐτὴν ἔχον δύναμιν ἥνπερ τοῖς ἐναίμοις τὸ αἷμα.* *Ibid.* 20 sqq.; *Hist. An.* i. 1, 486, b, 17 sqq., 487, a, 9, c. 7, 491, a 14 sqq.; ii. 1, 497, b, 9; viii. 1 (see *infra*).

[1] *Hist. An.* i. 4, 489, a, 21; *Part. An.* i. 5, 645, b, 8, ii. 3, 650, a, 34, iii. 5, 668, a 4, 25, *Gen. An.* ii. 4, 740, a, 21. *De Somno*, c. 3, 456, a, 35, and other passages.

[2] *Part. An.* ii. 8 *init.* iii. 5, 668, a, 25, ii. 1, 647, a, 19; *Hist. An.* i. 3, 4, 489, a, 18, 23; *De An.* ii. 11, 422, b, 21, 423, a, 14.

[3] *Gen. An.* i. 19, 727, b, 3; *Part.* ii. 3, 650, a, 34.

[4] *Part.* ii. 8, 653, b, 33–*fin.* c. 9, 655, a, 17 sqq. c. 6, 652, a, 2; *Hist.* iii. 7, 516, b, 12 sqq. c. 8, 517, a, 1, i. 1, 486, b, 19.

[5] *Part.* iv. 11, 691, a, 15, i. 4, 644, a, 21. *Hist.* iii. 10 *init.* i. 1, 486, b, 21.

[6] *Part.* iv. 12, 692, b, 15.

[7] *Part.* ii. 1, 647, a, 30, iv. 5, 678, b, 1, 681, b, 14, 28, a, 34; *Gen. An.* ii. 1, 735, a, 23 sqq. c. 4, 738, b, 16. c. 5, 741, b, 15. *De Respir.* c. 17, 478, b, 31 sqq. *De Motu An.* c. 10, 703, a, 14. On the parts which Aristotle regarded as analogous to the heart see MEYER, p. 429.

[8] *Part.* ii. 7, 652, b, 23, 653, a, 11; *De Somno*, 3, 457, b, 29.

[9] *Part.* i. 5, 645, b, 6, iii. 6 *init.* iv. 1, 676, a, 27; *Hist. An.* viii. 2, 589, b, 18, ii. 13, 504, b, 28; *De Resp.* c. 10 sq. 475, b, 15, 476, a, 1, 22.

take up food into their systems.[1] Some animals which have no tongues are provided with an analogous organ.[2] The arms of men, the fore feet of quadrupeds, the wings of birds, the claws of crabs, are all analogous,[3] while the elephant has a trunk instead of hands.[4] Oviparous animals are born from eggs; correspondingly, the embryo of mammals is surrounded with a skin like that of an egg, and in the chrysalis insects assume an oval form. Reversely, the earliest germs of higher animal life corresponds to the worms from which insects are bred.[5] The habits, occupations, tempers, and reason of animals can be compared with those of men; while the human soul in childhood can scarcely be distinguished from that of beasts.[6] Thus does one inner bond of union permeate all departments of organic nature—one life unfolds itself from the same fundamental forms in continually ascending degrees of perfection. And as organic nature is the sphere of contrivance and design,

[1] *De An.* ii. 4, 416, a, 4: *ὡς ἡ κεφαλὴ τῶν ζῴων, οὕτως αἱ ῥίζαι τῶν φυτῶν, εἰ χρὴ τὰ ὄργανα λέγειν ταὐτὰ καὶ ἕτερα τοῖς ἔργοις.* *De Juvent.* c. 1, 468, a, 9; *Ingr. An.* c. 4, 708, a, 6.

[2] *Part.* iv. 5, 678, b, 6–10.

[3] *Part.* iv. 12, 693, a, 26, b, 10, c. 11, 691, b, 17; *Hist.* i. 1. 486, b, 19, c. 4, 489, a, 28, ii. 1, 497, b, 18.

[4] *Part.* iv. 12, 692, b, 15.

[5] *Hist.* vii. 7, 586, a, 19; *Gen. An.* iii. 9. See i. 467, n. 1, *supra*.

[6] *Hist. An.* viii. 1, 588, a, 18: *ἔνεστι γὰρ ἐν τοῖς πλείστοις καὶ τῶν ἄλλων ζῴων ἴχνη τῶν περὶ τὴν ψυχὴν τρόπων, ἅπερ ἐπὶ τῶν ἀνθρώπων ἔχει φανερωτέρας τὰς διαφοράς.* After illustrating this with examples he proceeds: *τὰ μὲν γὰρ τῷ μᾶλλον καὶ ἧττον διαφέρει πρὸς τὸν ἄνθρωπον . . . τὰ δὲ τῷ ἀνάλογον διαφέρει· ὡς γὰρ ἐν ἀνθρώπῳ τέχνη καὶ σοφία καὶ σύνεσις, οὕτως ἐν'οις τῶν ζῴων ἐστί τις ἑτέρα τοιαύτη φυσικὴ δύναμις. φανερώτατον δ' ἐστὶ τὸ τοιοῦτον ἐπὶ τὴν τῶν παίδων ἡλικίαν βλέψασιν· ἐν τούτοις γὰρ τῶν μὲν ὕστερον ἕξεων ἐσομένων ἔστιν ἰδεῖν οἷον ἴχνη καὶ σπέρματα, διαφέρει δ' οὐθὲν ὡς εἰπεῖν ἡ ψυχὴ τῆς τῶν θηρίων ψυχῆς κατὰ τὸν χρόνον τοῦτον, ὥστ' οὐδὲν ἄλογον, εἰ τὰ μὲν ταὐτὰ τὰ δὲ παραπλήσια τὰ δ' ἀνάλογον ὑπάρχει τοῖς ἄλλοις ζῴοις.*

it is itself in turn the object which all the inorganic universe must serve. The elements exist for the sake of homogeneous substance, and this for the sake of organic structures. Here, therefore, the order of existence is reversed: that which is last in origin is first in essence and value.[1] Nature, after displaying a continual decrease of perfection from the highest sphere of heaven to earth, there reaches her turning point, and the descending scale of being begins to reascend.[2] The elements by their mixture prepare the conditions necessary for the development of living creatures, and we see Life expanding itself from its first weak germs to its highest manifestation in humanity.[3]

[1] *Part. An.* ii. 1, 646, a, 12: τριῶν δ' οὐσῶν τῶν συνθέσεων [on which see i. 517, n. 6, *sup.*] πρώτην μὲν ἄν τις θείη τὴν ἐκ τῶν καλουμένων ὑπό τινων στοιχείων . . . . δευτέρα δὲ σύστασις ἐκ τῶν πρώτων ἡ τῶν ὁμοιομερῶν φύσις ἐν τοῖς ζῴοις ἐστίν, οἷον ὀστοῦ καὶ σαρκὸς καὶ τῶν ἄλλων τῶν τοιούτων. τρίτη δὲ καὶ τελευταία τὸν ἀριθμὸν ἡ τῶν ἀνομοιομερῶν, οἷον προσώπου καὶ χειρὸς καὶ τῶν τοιούτων μορίων. ἐπεὶ δ' ἐναντίως ἐπὶ τῆς γενέσεως ἔχει καὶ τῆς οὐσίας· τὰ γὰρ ὕστερα τῇ γενέσει πρότερα τὴν φύσιν ἐστὶ καὶ πρῶτον τὸ τῇ γενέσει τελευταῖον, for the house does not exist for the sake of the stones and the bricks, but these for the sake of the house, and generally the material for the sake of the form and the final product: τῷ μὲν οὖν χρόνῳ προτέραν τὴν ὕλην ἀναγκαῖον εἶναι καὶ τὴν γένεσιν, τῷ λόγῳ δὲ τὴν οὐσίαν καὶ τὴν ἑκάστου μορφήν. . . . ὥστε τὴν μὲν τῶν στοιχείων ὕλην ἀναγκαῖον εἶναι τῶν ὁμοιομερῶν ἕνεκεν, ὕστερα γὰρ ἐκείνων ταῦτα τῇ γενέσει, τούτων δὲ τὰ ἀνομοιομερῆ [*i.e.* organic nature]. ταῦτα γὰρ ἤδη τὸ τέλος ἔχει καὶ τὸ πέρας . . . ἐξ ἀμφοτέρων μὲν οὖν τὰ ζῷα συνέστηκε τῶν μορίων τούτων, ἀλλὰ τὰ ὁμοιομερῆ τῶν ἀνομοιομερῶν ἕνεκέν ἐστιν· ἐκείνων γὰρ ἔργα καὶ πράξεις εἰσὶν, οἷον ὀφθαλμοῦ, &c.

[2] Cf. what is said in *Gen. An.* ii. 1, 731, b, 24: ἐπεὶ γάρ ἐστι τὰ μὲν ἀΐδια καὶ θεῖα τῶν ὄντων τὰ δ' ἐνδεχόμενα καὶ εἶναι καὶ μὴ εἶναι, τὸ δὲ καλὸν καὶ τὸ θεῖον αἴτιον ἀεὶ κατὰ τὴν αὐτοῦ φύσιν τοῦ βελτίονος ἐν τοῖς ἐνδεχομένοις, τὸ δὲ μὴ ἀΐδιον ἐνδεχόμενόν ἐστι καὶ εἶναι καὶ μεταλαμβάνειν καὶ τοῦ χείρονος καὶ τοῦ βελτίονος, βέλτιον δὲ ψυχὴ μὲν σώματος, τὸ δ' ἔμψυχον τοῦ ἀψύχου διὰ τὴν ψυχήν, καὶ τὸ εἶναι τοῦ μὴ εἶναι καὶ τὸ ζῆν τοῦ μὴ ζῆν, διὰ ταύτας τὰς αἰτίας γένεσις ζῴων ἐστίν.

[3] That Aristotle conceives of such a process of development from lower to higher forms, and of man as the highest step in the scale of evolution, by refer-

Aristotle finds the first indications of this Life in inorganic nature. Movement in general may be re-

ence to which we may test the degree of perfection attained by lower forms of being, is obvious from the passages referred to, pp. 21 sq., 25 sq., and i. 465 sq., *supra*, as well as from those which immediately follow. Cf. further *Part. An.* ii. 10, 655, b, 37 sqq., *Gen. An.* i. 23, 731, a, 24. In the former of these passages Aristotle says: plants have few and simple organs, τὰ δὲ πρὸς τῷ ζῆν αἴσθησιν ἔχοντα πολυμορφοτέραν ἔχει τὴν ἰδέαν, καὶ τούτων ἕτερα πρὸ ἑτέρων μᾶλλον, καὶ πολυχουστέραν, ὅσων μὴ μόνον τοῦ ζῆν ἀλλὰ καὶ τοῦ εὖ ζῆν ἡ φύσις μετείληφεν. τοιοῦτο δ' ἐστὶ τὸ τῶν ἀνθρώπων γένος· ἢ γὰρ μόνον μετέχει τοῦ θείου τῶν ἡμῖν γνωρίμων ζῴων, ἢ μάλιστα πάντων. In the latter: τῆς μὲν γὰρ τῶν φυτῶν οὐσίας οὐθέν ἐστιν ἄλλο ἔργον οὐδὲ πρᾶξις οὐδεμία πλὴν ἡ τοῦ σπέρματος γένεσις . . . τοῦ δὲ ζῴου οὐ μόνον τὸ γεννῆσαι ἔργον (τοῦτο μὲν γὰρ κοινὸν τῶν ζώντων πάντων), ἀλλὰ καὶ γνώσεώς τινος πάντα μετέχουσι, τὰ μὲν πλείονος, τὰ δ' ἐλάττονος, τὰ δὲ πάμπαν μικρᾶς. αἴσθησιν γὰρ ἔχουσιν, ἡ δ' αἴσθησις γνῶσίς τις. ταύτης δὲ τὸ τίμιον καὶ ἄτιμον πολὺ διαφέρει σκοποῦσι πρὸς φρόνησιν καὶ πρὸς τὸ τῶν ἀψύχων γένος. πρὸς μὲν γὰρ τὸ φρονεῖν ὥσπερ οὐδὲν εἶναι δοκεῖ τὸ κοινωνεῖν ἁφῆς καὶ γεύσεως μόνον, πρὸς δὲ ἀναισθησίαν βέλτιστον. It is not inconsistent with this view that, starting from man, Aristotle (*Part. An.* iv. 10, 686, b, 20 sqq.) should attribute to the different animal tribes a continually diminishing degree of perfection as compared with him, and (*Hist. An.* i. 6, 491, a, 19) should begin with man as being best known to us. Nor can we with FRANTZIUS (*Arist. üb. die Theile d. Thiere*, p. 315, 77; contrast MEYER, *Arist. Thierk.* 481 sqq.) conclude from these passages that Aristotle regards nature under the form of a retrogressive rather than a progressive development, and conceives of its history as that of an ideal animal assuming a succession of degenerate shapes as it descends from the human to the vegetable form. For, in the first place, he does not always begin with man, but only when he is treating of the external organs; when, on the other hand, he is dealing with the internal organisation, a field in which more is known of the lower animals than of men, he takes the opposite course (*Hist. An.* i. 16 *init.*, cf. *Part.* ii. 10, 656, a, 8). But, in the second place, it does not at all follow that that which is more known to us must in itself be the first either in point of value or of time, or that because Aristotle, in treating of the forms of organic life, begins with the more perfect and proceeds to the more imperfect, therefore nature follows the same course in producing them. On the contrary, he states as definitely as possible that nature proceeds in the reverse order; see, besides other passages, the preceding note. There is here no question of a metamorphosis such as that described, either retrogressive or progressive. Aristotle does not conceive of an

garded as a sort of life. In a certain sense we attribute animation to everything: we talk of the life of the air and the wind, and find analogies to the phenomena of the organic life of animals in the sea.[1] Again, the world has its youth and age like plants and animals, except that they do not succeed each other as conditions of the whole, but are present simultaneously as alternating states of its parts. A well-watered region may dry up and grow old, while an arid tract may spring into fresh life by timely moisture. When streams increase, the land about their mouths is gradually changed to sea; when they dry up, the sea becomes land.[2] When these changes take place slowly, length

ideal individual either developing or degenerating into various forms. The organic forms do not themselves pass into one another; the transition is effected by nature as she rises to the fuller exercise of her creative power. Cf. p. 25, *supra*.

[1] See i. 459, n. 5, 460, n. 1, *sup.*, and *Gen. An.* iv. 10, 778, a, 2: *βίος γάρ τις καὶ πνεύματός ἐστι καὶ γένεσις καὶ φθίσις.* Upon the sea v. *Meteor.* ii. 2, 355, b, 4 sqq. 356, a, 33 sqq.

[2] Cf. on this the full and remarkable exposition, *Meteor.* i. 14. The same regions, Aristotle there says, are not always wet or dry, but according as rivers arise or disappear, the land retreats before the sea or the sea before the land. This happens, however, *κατὰ τινὰ τάξιν καὶ περίοδον. ἀρχὴ δὲ τούτων καὶ αἴτιον ὅτι καὶ τῆς γῆς τὰ ἐντὸς, ὥσπερ τὰ σώματα τὰ τῶν φυτῶν καὶ ζῴων, ἀκμὴν ἔχει καὶ γῆρας.* In regard to the latter, however, *ἅμα πᾶν ἀκμάζειν καὶ φθίνειν ἀναγκαῖον· τῇ δὲ γῇ τοῦτο γίνεται κατὰ μέρος διὰ ψῦξιν καὶ θερμότητα.* As these increase or diminish, portions of the earth change their character, *ὥστε μέχρι τινὸς ἔνυδρα δύναται διαμένειν, εἶτα ξηραίνεται καὶ γηράσκει πάλιν· ἕτεροι δὲ τόποι βιώσκονται καὶ ἔνυδροι γίγνονται κατὰ μέρος.* Where a region dries up, the rivers decrease and finally disappear, the sea retreats, and land is formed where the sea was before; the opposite happens when the moisture of a district increases. As examples of the former process, Aristotle in the following passage (351, b, 28 sqq., 352, b, 19 sqq.) names Egypt, which is unmistakably a *πρόσχωσις τοῦ Νείλου*, an *ἔργον τοῦ ποταμοῦ* (*δῶρον τοῦ ποταμοῦ*, HEROD. ii. 5), and the region surrounding the oracle of Ammon, which, like Egypt, lies below the level of the sea and must therefore once have been the sea bottom; Argolis and the neighbourhood of My-

of time and the gradual character of the transformation cause the memory of them to be usually forgotten;[1] when they happen suddenly they belong to that class of devastating inundations[2] to which Aristotle, following Plato,[3] attributed those relapses into primitive barbarism which, coeternal though the human race is assumed to be

cenæ in Greece; the Bosphorus, the shore of which is continually changing. Some, he says (352, a, 17 sqq.; according to ii. 3, 356, b, 9 sqq., he is thinking here of Democritus, but the same view is ascribed to Anaximander and Diogenes; cf. ZELLER, *Ph. d. Gr.* i. 205, 2, 799, 4), attribute these changes to a change in the world as a whole, ὡς γινομένου τοῦ οὐρανοῦ, holding that the collective mass of the sea is diminished by gradual evaporation (contrast *Meteor.* ii. 3). But if in many places the sea changes into land and contrariwise land into sea, we cannot explain this upon the ground of a γένεσις τοῦ κόσμου· γελοῖον γὰρ διὰ μικρὰς καὶ ἀκαριαίας μεταβολὰς κινεῖν τὸ πᾶν, ὁ δὲ τῆς γῆς ὄγκος καὶ τὸ μέγεθος οὐθέν ἐστι δήπου πρὸς τὸν ὅλον οὐρανόν. ἀλλὰ πάντων τούτων αἴτιον ὑποληπτέον ὅτι γίγνεται διὰ χρόνων εἱμαρμένων, οἷον ἐν ταῖς κατ' ἐνιαυτὸν ὥραις χειμὼν, οὕτω περιόδου τινὸς μεγάλης μέγας χειμὼν καὶ ὑπερβολὴ ὄμβρων. αὕτη δ' οὐκ ἀεὶ κατὰ τοὺς αὐτοὺς τόπους. Deucalion's flood was chiefly confined to ancient Hellas or the country watered by the Achelous. Cf. 352, b, 16: ἐπεὶ δ' ἀνάγκη τοῦ ὅλου [the whole globe] γίγνεσθαι μέν τινα μεταβολὴν, μὴ μέντοι γένεσιν καὶ φθορὰν, εἴπερ μένει [μενεῖ] τὸ πᾶν, ἀνάγκη . . . μὴ τοὺς αὐτοὺς ἀεὶ τόπους ὑγροὺς τ' εἶναι θαλάττῃ καὶ ποταμοῖς καὶ ξηρούς. The Tanais, consequently, and the Nile will one day cease to flow, and the Palus Mæotis will be dried up: τὸ γὰρ ἔργον αὐτῶν ἔχει πέρας ὁ δὲ χρόνος οὐκ ἔχει.

[1] *Ibid.* 351, b, 8 sqq, which also refers to Egypt.

[2] The other possibility, of a sudden destroying heat, is even more completely neglected by Aristotle than by Plato.

[3] Plato introduces the story of the Atlantides in the *Timæus* with the remark that devastating tempests, at one time of fire, as in the time of Phaëthon, at another of flood, overtake mankind at intervals. When cities, with all their attendant civilisation, become overwhelmed in the latter, the survivors, who are for the most part semi-barbarous mountaineers, must begin again from the beginning. Hence we have a youthful Hellenic culture side by side with an effete Egyptian civilisation. The same conception recurs in the account of the gradual rise of civilised states out of primitive barbarism, in the *Laws*, iii. 676, B sqq.—the question whether the human race has existed from all eternity or only for an indefinitely long time (vi. 781, E) being left undecided.

[illegible] it in the [illegible] in the strict [illegible] declares, in [illegible] in Plants [illegible]

[illegible]

[illegible] [illegible], and [illegible] view of [illegible] Cf. BERNAYS, [illegible] 44 sq.

[illegible] has already been shown [illegible] and 256, [illegible] and will be still [illegible] Ch. XII. part [illegible] regards religious [illegible] and proverbial [illegible] as remnants of a civilisation [illegible] has been destroyed [illegible] of nature. These [illegible] however (according [illegible]), can only have [illegible] particular parts of the [illegible] so wide [illegible] survivors of the [illegible] were forced to [illegible] from the very beginning. [illegible] CENSORINUS [illegible] of the great [illegible] on which see ZELLER [illegible] 864, n. 4, and [illegible] maximum [illegible] magnum appellat,' we [illegible] conclude as BERNAYS, [illegible] shows that Aristotle [illegible] of periodic revolutions in the history of the universe or [illegible] the earth as a whole. He may have employed the expression in discussing the views of others, perhaps in the books upon philosophy (on which see p. 56 sq.).

[illegible] See p. [illegible] supra.

## 2. *Plants.*

Plants stand lowest in the scale of living creatures.[1] They first display a real soul, inhabiting an organic body, and no mere analogue of a soul. Yet this soul is of the lowest sort, and its functions are confined to nutrition and propagation.[2] Vegetables are not endowed with sensation and locomotion or the faculties of life from which they spring.[3] They have no vital point of unity (no μεσότης), as is proved by the fact that they continue to live after being cut in pieces; and owing to this defect they are insensible to the form of that which operates upon them.[4] Hence we may compare them to animals that have coalesced; for though in reality they have but one soul, they combine several potential souls.[5] Again the sexes have not yet

[1] On Aristotle's botanical treatise cf. p. 93. All that his extant works contain upon the subject of plants is to be found collected in WIMMER's *Phytologiæ Aristot. Fragmenta* (Breslau, 1838).

[2] See p. 1, n. 3, *supra*.

[3] See p. 21, n. 2, *supra*. As plants never awake to sensation, their condition is like an eternal sleep, and they do not, accordingly, participate in the alternations of sleep and waking (*De Somno*, 1, 454, a, 15; *Gen. An.* v. 1, 778, b, 31 sqq.). For the same reason there is no distinction between the front and the back in plants, for this depends upon the position of the different organs of sense. Finally, being without the power of locomotion while they participate in growth, they have no right and left side, but merely an upper and a lower; *Ingr. An.* c. 4, 705, a. 29–b, 21; *Juvent.* c. 1, 467, b, 32; *De Cælo*, ii. 2, 284, b, 27, 285, a, 16, cf. i. 497, n. 1, *supra*. On Plato's view of plants, which in spite of particular deviations from Aristotle's is yet nearly related to it, see *Ph. d. Gr.* pp. 731, 714, 7.

[4] *De An.* i. 5, 411, b, 19, ii. 2, 413, b, 16, c. 12, 424, a 32; *Long. Vitæ*, c. 6, 467, a, 18; *Juv. et Sen.* c. 2, 468, a, 28. See also foll. n.

[5] *Juv. et Sen.* 2, 468, a, 29 sqq., where, speaking of insects which can live in a divided form, he says: they are plants which live on in slips; they have only one soul ἐνεργείᾳ, but several δυνάμει. ἐοίκασι γὰρ τὰ τοιαῦτα τῶν ζῴων πολλοῖς ζῴοις συμπεφυκόσιν. *Gen. An.* i. 23, 731, a,

attained to separate existence in them: confined to mere vitality and the propagation of their species, they remain in the condition of perpetual union of the sexes.[1] The nature of their body corresponds to this incompleteness in the life of their soul. Its material composition consists principally of earth;[2] its structure is simple, designed for few functions, and therefore provided with few organs;[3] deriving its nourishment from the earth, and being deprived of locomotion, it is rooted to the ground, and the upper part of it, which corresponds to the head of animals, is turned downwards—the better member to the worse place.[4] It is true that in its contrivance we do not altogether fail to trace the designing faculty of nature, but we do so only indistinctly.[5] But, though in comparison with other living creatures plants occupy so low a place, compared with

21: ἀτεχνῶς ἔοικε τὰ ζῷα ὥσπερ φυτὰ εἶναι διαιρετά. *De An.* ii. 2, 413, b, 18: ὡς οὔσης τῆς ἐν τούτοις ψυχῆς ἐντελεχείᾳ μὲν μιᾶς ἐν ἑκάστῳ φυτῷ, δυνάμει δὲ πλειόνων. Cf. *Part. An.* iv. 5, 682, a, 6; *De Resp.* c. 17, 479, a, 1; *Ingr. An.* 7, 707, b, 2.

[1] *Gen. An.* i. 23, 731, a, i. 24, b, 8, c. 20, 728, b, 32 sqq. c. 4, 717, a, 21. ii. 4 *fin.* iv. 1, 763, b, 24, iii. 10, 759, b, 30; *Hist. An.* viii. 1, 588, b, 24, iv. 11, 538, a, 18.

[2] *De Resp.* 13, 14, 477, a, 27, b, 23 sqq.; *Gen. An.* iii. 11, 761, a, 29. That Aristotle held that there were other constituents in plants besides earth is obvious from the passage cited i. 482, n. 3, *supra.* According to *Meteor.* iv. 8, 384, b, 30, plants consist of earth and water, the water serving for their food (*Gen. An.* iii. 2, 753, b, 25; *H. An.* vii. 19, 601, b, 11), for the consumption of which heat is necessary (see p. 12, n. 3, and p. 14, n. 2 *ad fin.*, *supra*).

[3] *De An.* ii. 1, 412, b, 1; *Part. An.* ii. 10, 655, b, 37; *Phys.* viii. 7, 261, a, 15.

[4] *Ingr. An.* c. 4 *init.* c. 5, 706, b, 3 sqq.; *Long. Vitæ*, 6, 467, b, 2; *Juv. et Sen.* c. 1 *fin.*; *Part. An.* iv. 7, 683, b, 18, c. 10, 686, b, 31 sqq. See further p. 27, n. 1, *sup.*

[5] *Phys.* ii. 8, 199, a, 23: καὶ ἐν τοῖς φυτοῖς φαίνεται τὰ συμφέροντα γινόμενα πρὸς τὸ τέλος, οἷον τὰ φύλλα τῆς τοῦ καρποῦ ἕνεκα σκέπης . . . . τὰ φυτὰ τὰ φύλλα ἕνεκα τῶν καρπῶν [sc. ἔχει] καὶ τὰς ῥίζας οὐκ ἄνω ἀλλὰ κάτω ἕνεκα τῆς τροφῆς. b, 9: καὶ ἐν τοῖς φυτοῖς ἔνεστι τὸ ἕνεκά του, ἧττον δὲ διήρθρωται.

the inanimate world the operation of the soul in plants, and especially the propagation of the species, must be placed very high.[1] As all terrestrial things imitate by their endless reproduction the eternity of Heaven, so living creatures are enabled by means of procreation to partake, within the limits of their own particular species, of the eternal and the divine.[2] This, then, is the highest aim of vegetable life.[3] A more elevated rank of vitality appears in Animals,[4] to which Aristotle

[1] Cf. precedirg note and p. 13 sqq.

[2] *Gen. An.* ii. 1, 731, b, 31: ἐπεὶ γὰρ ἀδύνατος ἡ φύσις τοῦ τοιούτου γένους ἀΐδιος εἶναι, καθ' ὃν ἐνδέχεται τρόπον, κατὰ τοῦτόν ἐστιν ἀΐδιον τὸ γιγνόμενον. ἀριθμῷ μὲν οὖν ἀδύνατον, . . . . εἴδει δ' ἐνδέχεται· διὸ γένος ἀεὶ ἀνθρώπων καὶ ζῴων ἐστὶ καὶ φυτῶν. *Ibid.* 735, a, 16: all animals and plants have τὸ θρεπτικόν· τοῦτο δ' ἔστι τὸ γεννητικὸν ἑτέρου οἷον αὐτό· τοῦτο γὰρ παντὸς φύσει τελείου ἔργον καὶ ζῴου καὶ φυτοῦ. *De An.* ii. 4, 415, a, 26: φυσικώτατον γὰρ τῶν ἔργων τοῖς ζῶσιν, ὅσα τέλεια καὶ μὴ πηρώματα, ἢ τὴν γένεσιν αὐτομάτην ἔχει, τὸ ποιῆσαι ἕτερον οἷον αὐτὸ, ζῷον μὲν ζῷον, φυτὸν δὲ φυτὸν, ἵνα τοῦ ἀεὶ καὶ τοῦ θείου μετέχωσιν ᾗ δύνανται &c. *Polit.* i. 2, 1252, a, 28. Cf. the passages, *Gen. et Corr.* ii. 10 and 11 (i. 511, n. 3, *sup.*), from which *Œcon.* i. 3, 1343, b, 23 is copied, and on the propositions of Plato which Aristotle here follows, *Ph. d. Gr.* i. 512, 3.

[3] *De An.* ii. 4. See p. 21, n. 1, *supra.*

[4] Among further details of Aristotle's doctrine of plants may be mentioned: (1) his division of the plant into root, stem, branches, and leaves. The root is the nutritive organ. and the leaves are veined in order to diffuse the nutriment which is contained in the sap (*Part. An.* iv. 4, 678, a, 9, iii. 5, 668, a, 22; *Juv. et Sen.* 3, 468, b, 24). Again (*Part. An.* ii. 10 *init.*), he divides the bodies of plants and animals into three chief parts: that by which they take up food into their system (the head), that by which they rid themselves of superfluous matter, and that which lies in the middle between these two. In plants, the root is the head (see p. 27, n. 1, *supra*); as the nutriment they draw from the earth is already digested, they require no store-chamber for useless surplus (on this see also *Gen. An.* ii. 4, 740, a, 25, b, 8); nevertheless, the fruit and the seed which form at the opposite end from the root are secretions (*Part. An.* ii. 3, 10, 650, a, 20, 655, b, 32, iv. 4, 678, a, 11; *H. An.* iv. 6, 531, b, 8, with which *De Sensu*, 5, 445, a, 19, where the elements which plants fail to absorb and leave behind in the soil seem to be regarded as περιττώματα of the food of plants, is not inconsis-

accordingly devoted so large a portion of his scientific activity.[1]

tent).—(2) Earth and water are the food of plants (*Gen. et Corr.* ii. 8, 335, a, 11; *Part. An.* ii. 3, 650, a, 3, and p. 34, n. 2, *supra.* Cf. *H. An.* vii. 19, 601, b, 12; *Gen. An.* iii. 11, 762, b, 12); it is the sweet part of their food that nourishes plants and animals (*De Sensu*, 4, 442, a, 1–12); this they consume by aid of their vital heat (cf. p. 12, n. 3, and p. 14, n. 2, *supra*, and *Part. An.* ii. 3, 650, a, 3 sqq.), which, in its turn, is supplied to them partly from their food, partly from the surrounding atmosphere, albeit plants do not require respiration; if the atmosphere is too cold or too hot the vital heat is destroyed and the plant withers (*De Sensu*, c. 6; cf. *Respir.* 17, 478, b, 31). As to the influence exercised upon the character and colour of plants by the nature of the soil and water, see *Polit.* vii. 16, 1335, b, 18; *Gen. An.* ii. 4, 738, b, 32 sqq. v. 6, 786, a, 2 sqq.; *H. An.* v. 11, 543, b, 23; *De Sensu*, 4, 441, a, 11, 30; cf. *Probl.* 20, 12; *De Color.* c. 5.—(3) The seed and the fruit of plants are made of the surplus portion of their food (*Part. An.* ii. 10, 655, b, 35, c. 7, 638, a, 24; *Gen. An.* iii. 1, 749, b, 27, 750, a, 20, i. 18, 722, a, 11, 723, b, 16, 724, b, 19, c. 20, 728, a, 26, c. 23, 731, a, 2 sqq.; *Meteor.* iv. 3, 380, a, 11); they contain both the germ and the food of the new plant (*De An.* ii. 1, 412, b, 26; *Gen. An.* ii. 4, 740, b, 6, i. 23, 731, a, 7); smaller plants are more fruitful, being able to expend more material upon the formation of seeds: on the other hand, excessive fruitfulness stunts and destroys plants, because it absorbs too much of the nutritive substance (*Gen. An.* i. 8, 718, b, 12, iii. 1, 749, b, 26, 750, a, 20 sqq. iv. 4, 771, b, 13, i. 18, 725, b, 25; cf. *H. An.* v. 14, 546, a, 1—on barren trees, especially the wild fig-tree, see *Gen. An.* i. 18, 726, a, 6, c. 1, 715, b, 21, iii. 5, 755, b, 10; *H. An.* v. 32, 557, b, 25). On the origin of the seed, see the remarks, *Gen. An.* i. 20, 728, b, 32 sqq. c. 18, 722, a, 11, 723, b, 9. On the development of the germ from the seed and on propagation by slips, *Juv. et Sen.* c. 3, 468, b, 18–28 (cf. WIMMER, p. 31; BRANDIS, p. 1240); *Gen. An.* ii. 4 739, b, 34, c. 6, 741, b, 34, iii. 2, 752, a, 21, c. 11, 761, b, 26; *Respir.* c. 17, 478, b, 33. On self-generation in plants and animals, and on parasites, there are remarks in *Gen. An.* i. 1, 715, b, 25, iii. 11, 762, b, 9, 18; *H. An.* v. 1, 539, a, 16.—(4) On the length of life and the decay of plants *vide* *Meteor.* i. 14, 351, a, 27; *Longit. Vitæ*, c. 4, 5, 466, a, 9, 20 sqq. c. 6; *De Respir.* 17, 478, b, 27; cf. *Gen. An.* iii. 1, 750, a, 20; on the fall of the leaf and evergreens, *Gen. An.* v. 3, 783, b, 10–22.

[1] On the sources from which he received assistance, *vide* the valuable account of BRANDIS, ii. b, 1298–1305. Of his predecessors in this field the most important was undoubtedly Democritus, whom he frequently mentions with the greatest respect. He refers further to certain views of Diogenes of Apollonia, Anaxagoras, Empedocles, Parmenides,

## 3. *Animals.*

The powers of nutrition and propagation are accompanied in all animals by sensation, the feeling of pleasure and pain, and the appetites: in most of them also by the power of locomotion. Hence the sentient and the motive soul is now added to the vegetable.[1] Even that moral and intellectual life which reaches its full development in man may be dimly traced in the lower animals: they exhibit gentleness and fierceness, fear and courage, cunning and understanding; nor do we fail to perceive an analogue to the scientific faculty of men in the teachableness of certain animals; while conversely children display the same kind of rudi-

Alcmæon, Herodorus, Leophanes, Syennesis, Polybus, several statements of Ctesias and Herodotus (which, however, he treats with critical distrust), and now and then, rather by way of literary embellishment, to the poets. Notwithstanding all these, he must have mainly relied for his knowledge of animals upon his own observations, supplemented as those were by information received from shepherds, hunters, fishermen, breeders, and veterinary doctors. His theory, with the exception perhaps of a few isolated points, may be regarded as his own original work. 'The setting into place and putting to use of the facts left him by his predecessors,' BRANDIS remarks, 1303, 'as well as the scientific form which he gave to zoology, are in all probability Aristotle's own work.' LANGE, indeed, judges differently, *Gesch. d. Material.* i. 61: 'The belief that Aristotle was a great discoverer in natural science is still widely diffused. The knowledge, however, that he had many predecessors in this field . . . has necessarily caused this opinion to be much critisised,' &c. Yet when we ask where we hear of these predecessors, LANGE refers us (pp. 129, 11, 135, 50) merely to a quotation from MULLACH, *Fr. Phil.* i. 338, who, however, expresses himself much more guardedly: 'haud scio an Stagirites illam qua reliquos philosophos superat eruditionem *aliqua ex parte* Democriti librorum lectioni debuerit.' On the aid which Alexander is said to have lent Aristotle in his zoological investigations see p. 29 sq.

[1] See p. 21, *supra*.

mentary moral and intellectual development which we detect in brutes.[1]

The character and structure of their bodies answer

[1] *H. An.* viii. 1, 588, a, 18: ἔνεστι γὰρ &c. (see p. 27, n. 6, *supra*). καὶ γὰρ ἡμερότης καὶ ἀγριότης καὶ πρᾳότης καὶ χαλεπότης καὶ ἀνδρία καὶ δειλία καὶ φόβοι καὶ θάρρη καὶ θυμοὶ καὶ πανουργίαι καὶ τῆς περὶ τὴν διάνοιαν συνέσεως ἔνεισιν ἐν πολλοῖς αὐτῶν ὁμοιότητες. (For the continuation of this passage see p. 27, n. 6.) *Ibid.* ix. 1 *init.*: τὰ δ' ἤθη τῶν ζῴων ἐστὶ τῶν μὲν ἀμαυροτέρων καὶ βραχυβιωτέρων ἧττον ἡμῖν ἔνδηλα κατὰ τὴν αἴσθησιν, τῶν δὲ μακροβιωτέρων ἐνδηλότερα. φαίνονται γὰρ ἔχοντά τινα δύναμιν περὶ ἕκαστον τῶν τῆς ψυχῆς παθημάτων φυσικήν, περί τε φρόνησιν καὶ εὐήθειαν καὶ ἀνδρίαν καὶ δειλίαν, περί τε πρᾳότητα καὶ χαλεπότητα καὶ τὰς ἄλλας τὰς τοιαύτας ἕξεις. ἔνια δὲ κοινωνεῖ τινὸς ἅμα καὶ μαθήσεως καὶ διδασκαλίας, τὰ μὲν παρ' ἀλλήλων τὰ δὲ καὶ παρὰ τῶν ἀνθρώπων, ὅσαπερ ἀκοῆς μετέχει, μὴ μόνον ὅσα τῶν ψόφων ἀλλ' ὅσα καὶ τῶν σημείων διαισθάνεται τὰς διαφοράς. (Cf. c. 3 *init.*: τὰ δ' ἤθη τῶν ζῴων . . . διαφέρει κατά τε δειλίαν καὶ πρᾳότητα καὶ ἀνδρίαν καὶ ἡμερότητα καὶ νοῦν τε καὶ ἄνοιαν.) After discussing the difference between the sexes with respect to disposition, Aristotle continues, 608, b, 4: τούτων δ' ἴχνη μὲν τῶν ἠθῶν ἐστὶν ἐν πᾶσιν ὡς εἰπεῖν, μᾶλλον δὲ φανερώτερα ἐν τοῖς ἔχουσι μᾶλλον ἦθος καὶ μάλιστα ἐν ἀνθρώπῳ· τοῦτο γὰρ ἔχει τὴν φύσιν ἀποτετελεσμένην &c. Cf. i. 1, 488, b, 12 sqq.; *Gen. An.* i. 23 (see p. 28, n. 3, *supra*). Upon the docility and sagacity of many animals see also *Metaph.* i. 1, 980, a, 27 sqq.; *Eth.* iv. 7, 1141, a, 26; *Part. An.* ii. 1, 4, 648, a, 5, 650, b, 24. In the ninth book of his *Natural History* Aristotle treats not only of habits of animals in general but more especially of the traces of intelligence which they exhibit. Of all quadrupeds the sheep has the smallest amount of intelligence (c. 3, 610, b, 22); the stag, on the other hand, displays a large amount (c. 5). Bears, dogs, panthers, and many other animals find out the proper remedies against wounds and sickness, and the proper means of assistance against the attacks of other animals (c. 6). With what intelligence again do swallows build their nests, and the pigeon provide for his mate and his young (c. 7); how cunningly partridges manage their love-affairs, and hatch and protect their broods (c. 8); how cleverly the crane directs his flight (c. 10); what design is displayed in the habits of birds in general, in the choice of a habitation, in the building of their nests, in the search for food (see *ibid.* c. 11–36). In like manner Aristotle remarks upon the cunning of many marine animals (c. 37), the industry of spiders (c. 39), of bees, wasps, and the like (c. 40–43), the docility and cleverness of elephants (c. 46), the moral instinct of camels and horses (c. 47), the humane disposition of dolphins (c. 48), &c.; with all which it is only natural that much that is questionable should be mixed up.

to the higher rank which animals occupy in the scale of animated nature. Their more numerous and various functions require a greater number and complexity of organs. Aristotle discusses all these organs in his treatise on the *Parts of Animals*.[1] First (ii. 2–9) he describes the homogeneous materials of which they consist—blood, fat, marrow, brain, flesh, bones, sinews, veins, skin, &c. The fundamental constituents of these materials are the elements of warmth, cold, dryness, and humidity.[2] Flesh, or that which corresponds to it amongst the lower classes of animals,[3] is the most essential and indispensable portion of the animal economy: for Aristotle, unacquainted as he was with the nerves, believed that flesh was the medium of the most universal of the senses, that of touch, and therefore the most universal organ of animal life.[4] Bones, sinews, and external coverings serve to unite and protect the flesh.[5] The blood[6] furnishes the nourishment of the various solid

[1] More accurately in the last three books of this treatise; see i. 92, n. 1, and i. 89, n. 2, *supra*, on these and the Ἀνατομαί.

[2] *Part. An.* ii. 2 *init.*–c. 3, 650, a, 2, referring to the different respects in which one thing is said to be warmer than another, and the transition from one state into another.

[3] Cf. p. 26, n. 2, *supra*.

[4] *Part.* ii. 8 *init.*: πρῶτον [σκεπτέον] περὶ σαρκὸς ἐν τοῖς ἔχουσι σάρκας, ἐν δὲ τοῖς ἄλλοις τὸ ἀνάλογον· τοῦτο γὰρ ἀρχὴ καὶ σῶμα καθ' αὑτὸ τῶν ζῴων ἐστίν. δῆλον δὲ κατὰ τὸν λόγον· τὸ γὰρ ζῷον ὁριζόμεθα τῷ ἔχειν αἴσθησιν, πρῶτον δὲ τὴν πρώτην· αὕτη δ' ἐστὶν ἁφὴ, ταύτης δ' αἰσθητήριον τὸ τοιοῦτον μόριόν ἐστιν. On the importance of flesh for sensation see, further, c. 1, 647, a, 19, c. 3, 650, b, 5, c. 10, 656, b, 34; *H. An.* i. 3, 4, 489, a, 18, 23; but especially *De An.* ii. 11, 422, b, 19, 34 sqq. 423, b, 1 sqq. 29, iii. 2, 426, b, 15. The organ of sensation itself is the heart (see *infra*).

[5] *Part.* ii. 8, 653, b, 30 sqq.

[6] The blood, or that which corresponds to it (see p. 26, n. 1, *sup.*), is most immediately food (τελευταία or ἐσχάτη τροφὴ) to the animal body (*De Somno*, c. 3, 456, a, 34; *Part.* ii. 3, 650, a, 32 sqq. c. 4, 651, a, 12; *Gen. An.*

garded as a sort of life. In a certain sense we attribute animation to everything: we talk of the life of the air and the wind, and find analogies to the phenomena of the organic life of animals in the sea.[1] Again, the world has its youth and age like plants and animals, except that they do not succeed each other as conditions of the whole, but are present simultaneously as alternating states of its parts. A well-watered region may dry up and grow old, while an arid tract may spring into fresh life by timely moisture. When streams increase, the land about their mouths is gradually changed to sea; when they dry up, the sea becomes land.[2] When these changes take place slowly, length

ideal individual either developing or degenerating into various forms. The organic forms do not themselves pass into one another; the transition is effected by nature as she rises to the fuller exercise of her creative power. Cf. p. 25, *supra*.

[1] See i. 459, n. 5, 460, n. 1, *sup.*, and *Gen. An.* iv. 10, 778, a, 2: *βίος γάρ τις καὶ πνεύματός ἐστι καὶ γένεσις καὶ φθίσις.* Upon the sea v. *Meteor.* ii. 2, 355, b, 4 sqq. 356, a, 33 sqq.

[2] Cf. on this the full and remarkable exposition, *Meteor.* i. 14. The same regions, Aristotle there says, are not always wet or dry, but according as rivers arise or disappear, the land retreats before the sea or the sea before the land. This happens, however, *κατὰ τινὰ τάξιν καὶ περίοδον. ἀρχὴ δὲ τούτων καὶ αἴτιον ὅτι καὶ τῆς γῆς τὰ ἐντὸς, ὥσπερ τὰ σώματα τὰ τῶν φυτῶν καὶ ζῴων, ἀκμὴν ἔχει καὶ γῆρας.* In regard to the latter, however, *ἅμα πᾶν ἀκμάζειν καὶ φθίνειν ἀναγκαῖον· τῇ δὲ γῇ τοῦτο γίνεται κατὰ μέρος διὰ ψῦξιν καὶ θερμότητα.* As these increase or diminish, portions of the earth change their character, *ὥστε μέχρι τινὸς ἔνυδρα δύναται διαμένειν, εἶτα ξηραίνεται καὶ γηράσκει πάλιν· ἕτεροι δὲ τόποι βιώσκονται καὶ ἔνυδροι γίγνονται κατὰ μέρος.* Where a region dries up, the rivers decrease and finally disappear, the sea retreats, and land is formed where the sea was before; the opposite happens when the moisture of a district increases. As examples of the former process, Aristotle in the following passage (351, b, 28 sqq., 352, b, 19 sqq.) names Egypt, which is unmistakably a *πρόσχωσις τοῦ Νείλου*, an *ἔργον τοῦ ποταμοῦ* (*δῶρον τοῦ ποταμοῦ*, Herod. ii. 5), and the region surrounding the oracle of Ammon, which, like Egypt, lies below the level of the sea and must therefore once have been the sea bottom; Argolis and the neighbourhood of My-

of time and the gradual character of the transformation cause the memory of them to be usually forgotten;[1] when they happen suddenly they belong to that class of devastating inundations[2] to which Aristotle, following Plato,[3] attributed those relapses into primitive barbarism which, coeternal though the human race is assumed to be

cenæ in Greece; the Bosphorus, the shore of which is continually changing. Some, he says (352, a, 17 sqq.; according to ii. 3, 356, b, 9 sqq., he is thinking here of Democritus, but the same view is ascribed to Anaximander and Diogenes; cf. ZELLER, *Ph. d. Gr.* i. 205, 2, 799, 4), attribute these changes to a change in the world as a whole, ὡς γινομένου τοῦ οὐρανοῦ, holding that the collective mass of the sea is diminished by gradual evaporation (contrast *Meteor.* ii. 3). But if in many places the sea changes into land and contrariwise land into sea, we cannot explain this upon the ground of a γένεσις τοῦ κόσμου· γελοῖον γὰρ διὰ μικρὰς καὶ ἀκαριαίας μεταβολὰς κινεῖν τὸ πᾶν, ὁ δὲ τῆς γῆς ὄγκος καὶ τὸ μέγεθος οὐθέν ἐστι δήπου πρὸς τὸν ὅλον οὐρανόν. ἀλλὰ πάντων τούτων αἴτιον ὑποληπτέον ὅτι γίγνεται διὰ χρόνων εἱμαρμένων, οἷον ἐν ταῖς κατ' ἐνιαυτὸν ὥραις χειμὼν, οὕτω περιόδου τινὸς μεγάλης μέγας χειμὼν καὶ ὑπερβολὴ ὄμβρων. αὕτη δ' οὐκ ἀεὶ κατὰ τοὺς αὐτοὺς τόπους. Deucalion's flood was chiefly confined to ancient Hellas or the country watered by the Achelous. Cf. 352, b, 16: ἐπεὶ δ' ἀνάγκη τοῦ ὅλου [the whole globe] γίγνεσθαι μέν τινα μεταβολὴν, μὴ μέντοι γένεσιν καὶ φθορὰν, εἴπερ μένει [μενεῖ] τὸ πᾶν, ἀνάγκη . . . μὴ τοὺς αὐτοὺς ἀεὶ τόπους ὑγροὺς τ' εἶναι θαλάττῃ καὶ ποταμοῖς καὶ ξηρούς. The Tanais, consequently, and the Nile will one day cease to flow, and the Palus Mæotis will be dried up: τὸ γὰρ ἔργον αὐτῶν ἔχει πέρας ὁ δὲ χρόνος οὐκ ἔχει.

[1] *Ibid.* 351, b, 8 sqq., which also refers to Egypt.

[2] The other possibility, of a sudden destroying heat, is even more completely neglected by Aristotle than by Plato.

[3] Plato introduces the story of the Atlantides in the *Timæus* with the remark that devastating tempests, at one time of fire, as in the time of Phaëthon, at another of flood, overtake mankind at intervals. When cities, with all their attendant civilisation, become overwhelmed in the latter, the survivors, who are for the most part semi-barbarous mountaineers, must begin again from the beginning. Hence we have a youthful Hellenic culture side by side with an effete Egyptian civilisation. The same conception recurs in the account of the gradual rise of civilised states out of primitive barbarism, in the *Laws*, iii. 676, B sqq.—the question whether the human race has existed from all eternity or only for an indefinitely long time (vi. 781, E) being left undecided.

with the world,[1] yet from time to time befall it in the history of its civilisation.[2] Life nevertheless in the strict sense exists only, as Aristotle emphatically declares, in beings which are moved by their own soul, *i.e.* in Plants and Animals.[3]

[1] Aristotle does not, indeed, expressly say that this is so in any extant passage of his writings; it follows, however, from his whole view of the world that he could not have assigned a beginning to the human race any more than to the world itself. As man is the end of nature, she must have been imperfect for an infinite period of time, if at any time the human race did not as yet exist. Moreover, Aristotle actually says (cf. i. 475, n. 4, 508, n. 2, *supra*, that in the history of civilisation the same discoveries have been made an infinite number of times, and his pupil, Theophrastus, among other arguments against the eternity of the world controverts that which uses the comparative recentness of these discoveries to prove that mankind came into being within a definite period of time. See Ch. XII. part 3. According to CENSORINUS, 4, 3, Aristotle taught the eternity of the human race in one of his own writings. The question which he discusses *Gen. An.* iii. 11, 762, b, 28 sqq. how we are to conceive of the origin of man and the four-footed tribes (εἴπερ ἐγένοντό ποτε γηγενεῖς, ὥσπερ φασί τινες . . . εἴπερ ἦν τις ἀρχὴ τῆς γενέσεως πᾶσι τοῖς ζῴοις) is suggested hypothetically, and not from the point of view of his own theory. Cf. BERNAYS, *Theophr. v. d. Frömmigk.* 44 sq.

[2] It has already been shown i. 475, n. 4, 508, n. 2, and 256, n. 2, *supra*, and will be still further proved Ch. XII. part 2, that Aristotle regards religious beliefs and proverbial truths as remnants of a civilisation which has been destroyed by devastations of nature. These devastations, however (according to p. 30, n. 2), can only have affected particular parts of the earth, although often so wide that the scanty survivors of the former population were forced to begin again from the very beginning. When, therefore, CENSORINUS, 18, 11, says of the great *annus mundi* (on which see ZELLER, *Ph. d. Gr.* i. 684, n. 4, and 250), 'quem Aristoteles maximum potius quam magnum appellat,' we may not conclude (as BERNAYS, *ibid.* 170, shows) that Aristotle conceived of periodic revolutions in the history of the universe or even of the earth as a whole. He may have employed the expression in discussing the views of others perhaps in the books upon philosophy (on which see p. 56 sq.).

[3] See p. 1, *supra*.

## 2. *Plants.*

Plants stand lowest in the scale of living creatures.[1] They first display a real soul, inhabiting an organic body, and no mere analogue of a soul. Yet this soul is of the lowest sort, and its functions are confined to nutrition and propagation.[2] Vegetables are not endowed with sensation and locomotion or the faculties of life from which they spring.[3] They have no vital point of unity (no μεσότης), as is proved by the fact that they continue to live after being cut in pieces; and owing to this defect they are insensible to the form of that which operates upon them.[4] Hence we may compare them to animals that have coalesced; for though in reality they have but one soul, they combine several potential souls.[5] Again the sexes have not yet

[1] On Aristotle's botanical treatise cf. p. 93. All that his extant works contain upon the subject of plants is to be found collected in WIMMER's *Phytologiæ Aristot. Fragmenta* (Breslau, 1838).

[2] See p. 1, n. 3, *supra.*

[3] See p. 21, n. 2, *supra.* As plants never awake to sensation, their condition is like an eternal sleep, and they do not, accordingly, participate in the alternations of sleep and waking (*De Somno*, 1, 454, a, 15; *Gen. An.* v. 1, 778, b, 31 sqq.). For the same reason there is no distinction between the front and the back in plants, for this depends upon the position of the different organs of sense. Finally, being without the power of locomotion while they participate in growth, they have no right and left side, but merely an upper and a lower; *Ingr. An.* c. 4, 705, a. 29–b, 21; *Juvent.* c. 1, 467, b, 32; *De Cœlo*, ii. 2, 284, b, 27, 285, a, 16, cf. i. 497, n. 1, *supra.* On Plato's view of plants, which in spite of particular deviations from Aristotle's is yet nearly related to it, see *Ph. d. Gr.* pp. 731, 714, 7.

[4] *De An.* i. 5, 411, b, 19, ii. 2, 413, b, 16, c. 12, 424, a 32; *Long. Vitæ*, c. 6, 467, a, 18; *Juv. et Sen.* c. 2, 468, a, 28. See also foll. n.

[5] *Juv. et Sen.* 2, 468, a, 29 sqq., where, speaking of insects which can live in a divided form, he says: they are plants which live on in slips; they have only one soul ἐνεργείᾳ, but several δυνάμει. ἐοίκασι γὰρ τὰ τοιαῦτα τῶν ζῴων πολλοῖς ζῴοις συμπεφυκόσιν. *Gen. An.* i. 23, 731, a,

attained to separate existence in them: confined to mere vitality and the propagation of their species, they remain in the condition of perpetual union of the sexes.[1] The nature of their body corresponds to this incompleteness in the life of their soul. Its material composition consists principally of earth;[2] its structure is simple, designed for few functions, and therefore provided with few organs;[3] deriving its nourishment from the earth, and being deprived of locomotion, it is rooted to the ground, and the upper part of it, which corresponds to the head of animals, is turned downwards—the better member to the worse place.[4] It is true that in its contrivance we do not altogether fail to trace the designing faculty of nature, but we do so only indistinctly.[5] But, though in comparison with other living creatures plants occupy so low a place, compared with

21: ἀτεχνῶς ἔοικε τὰ ζῷα ὥσπερ φυτὰ εἶναι διαιρετά. *De An.* ii. 2, 413, b, 18: ὡς οὔσης τῆς ἐν τούτοις ψυχῆς ἐντελεχείᾳ μὲν μιᾶς ἐν ἑκάστῳ φυτῷ, δυνάμει δὲ πλειόνων. Cf. *Part. An.* iv. 5, 682, a, 6; *De Resp.* c. 17, 479, a, 1; *Ingr. An.* 7, 707, b, 2.

[1] *Gen. An.* i. 23, 731, a, i. 24, b, 8, c. 20, 728, b, 32 sqq. c. 4, 717, a, 21, ii. 4 *fin.* iv. 1, 763, b, 24, iii. 10, 759, b, 30; *Hist. An.* viii. 1, 588, b, 24, iv. 11, 538, a, 18.

[2] *De Resp.* 13, 14, 477, a, 27, b, 23 sqq.; *Gen. An.* iii. 11, 761, a, 29. That Aristotle held that there were other constituents in plants besides earth is obvious from the passage cited i. 482, n. 3, *supra.* According to *Meteor.* iv. 8, 384, b, 30, plants consist of earth and water, the water serving for their food (*Gen. An.* iii. 2, 753, b, 25; *H. An.* vii. 19, 601, b, 11), for the consumption of which heat is necessary (see p. 12, n. 3, and p. 14, n. 2 *ad fin.*, *supra*).

[3] *De An.* ii. 1, 412, b, 1; *Part. An.* ii. 10, 655, b, 37; *Phys.* viii. 7, 261, a, 15.

[4] *Ingr. An.* c. 4 *init.* c. 5, 706, b, 3 sqq.; *Long. Vitæ*, 6, 467, b, 2; *Juv. et Sen.* c. 1 *fin.*; *Part. An.* iv. 7, 683, b, 18, c. 10, 686, b, 31 sqq. See further p. 27, n. 1, *sup.*

[5] *Phys.* ii. 8, 199, a, 23: καὶ ἐν τοῖς φυτοῖς φαίνεται τὰ συμφέροντα γινόμενα πρὸς τὸ τέλος, οἷον τὰ φύλλα τῆς τοῦ καρποῦ ἕνεκα σκέπης . . . . τὰ φυτὰ τὰ φύλλα ἕνεκα τῶν καρπῶν [sc. ἔχει] καὶ τὰς ῥίζας οὐκ ἄνω ἀλλὰ κάτω ἕνεκα τῆς τροφῆς. b, 9: καὶ ἐν τοῖς φυτοῖς ἔνεστι τὸ ἕνεκά του, ἧττον δὲ διήρθρωται.

the inanimate world the operation of the soul in plants, and especially the propagation of the species, must be placed very high.[1] As all terrestrial things imitate by their endless reproduction the eternity of Heaven, so living creatures are enabled by means of procreation to partake, within the limits of their own particular species, of the eternal and the divine.[2] This, then, is the highest aim of vegetable life.[3] A more elevated rank of vitality appears in Animals,[4] to which Aristotle

[1] Cf. preceding note and p. 13 sqq.

[2] *Gen. An.* ii. 1, 731, b, 31: ἐπεὶ γὰρ ἀδύνατος ἡ φύσις τοῦ τοιούτου γένους ἀΐδιος εἶναι, καθ' ὃν ἐνδέχεται τρόπον, κατὰ τοῦτόν ἐστιν ἀΐδιον τὸ γιγνόμενον. ἀριθμῷ μὲν οὖν ἀδύνατον, . . . . εἴδει δ' ἐνδέχεται· διὸ γένος ἀεὶ ἀνθρώπων καὶ ζῴων ἐστὶ καὶ φυτῶν. *Ibid.* 735, a, 16: all animals and plants have τὸ θρεπτικόν· τοῦτο δ' ἔστι τὸ γεννητικὸν ἑτέρου οἷον αὐτό· τοῦτο γὰρ παντὸς φύσει τελείου ἔργον καὶ ζῴου καὶ φυτοῦ. *De An.* ii. 4, 415, a, 26: φυσικώτατον γὰρ τῶν ἔργων τοῖς ζῶσιν, ὅσα τέλεια καὶ μὴ πηρώματα, ἢ τὴν γένεσιν αὐτομάτην ἔχει, τὸ ποιῆσαι ἕτερον οἷον αὐτὸ, ζῷον μὲν ζῷον, φυτὸν δὲ φυτὸν, ἵνα τοῦ ἀεὶ καὶ τοῦ θείου μετέχωσιν ᾗ δύνανται &c. *Polit.* i. 2, 1252, a, 28. Cf. the passages, *Gen. et Corr.* ii. 10 and 11 (i. 511, n. 3, *sup.*), from which *Œcon.* i. 3, 1343, b, 23 is copied, and on the propositions of Plato which Aristotle here follows, *Ph. d. Gr.* i. 512, 3.

[3] *De An.* ii. 4. See p. 21, n. 1, *supra*.

[4] Among further details of Aristotle's doctrine of plants may be mentioned: (1) his division of the plant into root, stem, branches, and leaves. The root is the nutritive organ, and the leaves are veined in order to diffuse the nutriment which is contained in the sap (*Part. An.* iv. 4, 678, a, 9, iii. 5, 668, a, 22; *Juv. et Sen.* 3, 468, b, 24). Again (*Part. An.* ii. 10 *init.*), he divides the bodies of plants and animals into three chief parts: that by which they take up food into their system (the head), that by which they rid themselves of superfluous matter, and that which lies in the middle between these two. In plants, the root is the head (see p. 27, n. 1, *supra*); as the nutriment they draw from the earth is already digested, they require no store-chamber for useless surplus (on this see also *Gen. An.* ii. 4, 740, a, 25, b, 8); nevertheless, the fruit and the seed which form at the opposite end from the root are secretions (*Part. An.* ii. 3, 10, 650, a, 20, 655, b, 32, iv. 4, 678, a, 11; *H. An.* iv. 6, 531, b, 8, with which *De Sensu*, 5, 445, a, 19, where the elements which plants fail to absorb and leave behind in the soil seem to be regarded as περιττώματα of the food of plants, is not inconsis-

accordingly devoted so large a portion of his scientific activity.[1]

tent).—(2) Earth and water are the food of plants (*Gen. et Corr.* ii. 8, 335, a, 11; *Part. An.* ii. 3, 650, a, 3, and p. 34, n. 2, *supra*. Cf. *H. An.* vii. 19, 601, b, 12; *Gen. An.* iii. 11, 762, b, 12); it is the sweet part of their food that nourishes plants and animals (*De Sensu*, 4, 442, a, 1-12); this they consume by aid of their vital heat (cf. p. 12, n. 3, and p. 14, n. 2, *supra*, and *Part. An.* ii. 3, 650, a, 3 sqq.), which, in its turn, is supplied to them partly from their food, partly from the surrounding atmosphere, albeit plants do not require respiration; if the atmosphere is too cold or too hot the vital heat is destroyed and the plant withers (*De Sensu*, c. 6; cf. *Respir.* 17, 478, b, 31). As to the influence exercised upon the character and colour of plants by the nature of the soil and water, see *Polit.* vii. 16, 1335, b, 18; *Gen. An.* ii. 4, 738, b, 32 sqq. v. 6, 786, a, 2 sqq.; *H. An.* v. 11, 543, b, 23; *De Sensu*, 4, 441, a, 11, 30; cf. *Probl.* 20, 12; *De Color.* c. 5.—(3) The seed and the fruit of plants are made of the surplus portion of their food (*Part. An.* ii. 10, 655, b, 35, c. 7, 638, a, 24; *Gen. An.* iii. 1, 749, b, 27, 750, a, 20, i. 18, 722, a, 11, 723, b, 16, 724, b, 19, c. 20, 728, a, 26, c. 23, 731, a, 2 sqq.; *Meteor.* iv. 3, 380, a, 11); they contain both the germ and the food of the new plant (*De An.* ii. 1, 412, b, 26; *Gen. An.* ii. 4, 740, b, 6, i. 23, 731, a, 7); smaller plants are more fruitful, being able to expend more material upon the formation of seeds: on the other hand, excessive fruitfulness stunts and destroys plants, because it absorbs too much of the nutritive substance (*Gen. An.* i. 8, 718, b, 12, iii. 1, 749, b, 26, 750, a, 20 sqq. iv. 4, 771, b, 13, i. 18, 725, b, 25; cf. *H. An.* v. 14, 546, a, 1 —on barren trees, especially the wild fig-tree, see *Gen. An.* i. 18, 726, a, 6, c. 1, 715, b, 21, iii. 5, 755, b, 10; *H. An.* v. 32, 557, b, 25). On the origin of the seed, see the remarks, *Gen. An.* i. 20, 728, b, 32 sqq. c. 18, 722, a, 11, 723, b, 9. On the development of the germ from the seed and on propagation by slips, *Juv. et Sen.* c. 3, 468, b, 18-28 (cf. WIMMER, p. 31; BRANDIS, p. 1240); *Gen. An.* ii. 4 739, b, 34, c. 6, 741, b, 34, iii. 2, 752, a, 21, c. 11, 761, b, 26; *Respir.* c. 17, 478, b, 33. On self-generation in plants and animals, and on parasites, there are remarks in *Gen. An.* i. 1, 715, b, 25, iii. 11, 762, b, 9, 18; *H. An.* v. 1, 539, a, 16.—(4) On the length of life and the decay of plants *vide* *Meteor.* i. 14, 351, a, 27; *Longit. Vitæ*, c. 4, 5, 466, a, 9, 20 sqq. c. 6; *De Respir.* 17, 478, b, 27; cf. *Gen. An.* iii. 1, 750, a, 20; on the fall of the leaf and evergreens, *Gen. An.* v. 3, 783, b, 10–22.

[1] On the sources from which he received assistance, *vide* the valuable account of BRANDIS, ii. b, 1298–1305. Of his predecessors in this field the most important was undoubtedly Democritus, whom he frequently mentions with the greatest respect. He refers further to certain views of Diogenes of Apollonia, Anaxagoras, Empedocles, Parmenides,

### 3. *Animals.*

The powers of nutrition and propagation are accompanied in all animals by sensation, the feeling of pleasure and pain, and the appetites: in most of them also by the power of locomotion. Hence the sentient and the motive soul is now added to the vegetable.[1] Even that moral and intellectual life which reaches its full development in man may be dimly traced in the lower animals: they exhibit gentleness and fierceness, fear and courage, cunning and understanding; nor do we fail to perceive an analogue to the scientific faculty of men in the teachableness of certain animals; while conversely children display the same kind of rudi-

Alcmæon, Herodorus, Leophanes, Syennesis, Polybus, several statements of Ctesias and Herodotus (which, however, he treats with critical distrust), and now and then, rather by way of literary embellishment, to the poets. Notwithstanding all these, he must have mainly relied for his knowledge of animals upon his own observations, supplemented as those were by information received from shepherds, hunters, fishermen, breeders, and veterinary doctors. His theory, with the exception perhaps of a few isolated points, may be regarded as his own original work. 'The setting into place and putting to use of the facts left him by his predecessors,' BRANDIS remarks, 1303, 'as well as the scientific form which he gave to zoology, are in all probability Aristotle's own work.' LANGE, indeed, judges differently, *Gesch. d. Material.* i. 61: 'The belief that Aristotle was a great discoverer in natural science is still widely diffused. The knowledge, however, that he had many predecessors in this field . . . has necessarily caused this opinion to be much critisised,' &c. Yet when we ask where we hear of these predecessors, LANGE refers us (pp. 129, 11, 135, 50) merely to a quotation from MULLACH, *Fr. Phil.* i. 338, who, however, expresses himself much more guardedly: 'haud scio an Stagirites illam qua reliquos philosophos superat eruditionem *aliqua ex parte* Democriti librorum lectioni debuerit.' On the aid which Alexander is said to have lent Aristotle in his zoological investigations see p. 29 sq.

[1] See p. 21, *supra.*

mentary moral and intellectual development which we detect in brutes.[1]

The character and structure of their bodies answer

[1] *H. An.* viii. 1, 588, a, 18: ἔνεστι γὰρ &c. (see p. 27, n. 6, *supra*). καὶ γὰρ ἡμερότης καὶ ἀγριότης καὶ πρᾳότης καὶ χαλεπότης καὶ ἀνδρία καὶ δειλία καὶ φόβοι καὶ θάρρη καὶ θυμοὶ καὶ πανουργίαι καὶ τῆς περὶ τὴν διάνοιαν συνέσεως ἔνεισιν ἐν πολλοῖς αὐτῶν ὁμοιότητες. (For the continuation of this passage see p. 27, n. 6.) *Ibid.* ix. 1 *init.*: τὰ δ' ἤθη τῶν ζῴων ἐστὶ τῶν μὲν ἀμαυροτέρων καὶ βραχυβιωτέρων ἧττον ἡμῖν ἔνδηλα κατὰ τὴν αἴσθησιν, τῶν δὲ μακροβιωτέρων ἐνδηλότερα. φαίνονται γὰρ ἔχοντά τινα δύναμιν περὶ ἕκαστον τῶν τῆς ψυχῆς παθημάτων φυσικήν, περί τε φρόνησιν καὶ εὐήθειαν καὶ ἀνδρίαν καὶ δειλίαν, περί τε πρᾳότητα καὶ χαλεπότητα καὶ τὰς ἄλλας τὰς τοιαύτας ἕξεις. ἔνια δὲ κοινωνεῖ τινὸς ἅμα καὶ μαθήσεως καὶ διδασκαλίας, τὰ μὲν παρ' ἀλλήλων τὰ δὲ καὶ παρὰ τῶν ἀνθρώπων, ὅσαπερ ἀκοῆς μετέχει, μὴ μόνον ὅσα τῶν ψόφων ἀλλ' ὅσα καὶ τῶν σημείων διαισθάνεται τὰς διαφοράς. (Cf. c. 3 *init.*: τὰ δ' ἤθη τῶν ζῴων . . . διαφέρει κατά τε δειλίαν καὶ πρᾳότητα καὶ ἀνδρίαν καὶ ἡμερότητα καὶ νοῦν τε καὶ ἄνοιαν.) After discussing the difference between the sexes with respect to disposition, Aristotle continues, 608, b, 4: τούτων δ' ἴχνη μὲν τῶν ἠθῶν ἐστὶν ἐν πᾶσιν ὡς εἰπεῖν, μᾶλλον δὲ φανερώτερα ἐν τοῖς ἔχουσι μᾶλλον ἦθος καὶ μάλιστα ἐν ἀνθρώπῳ· τοῦτο γὰρ ἔχει τὴν φύσιν ἀποτετελεσμένην &c. Cf. i. 1, 488, b, 12 sqq.; *Gen. An.* i. 23 (see p. 28, n. 3, *supra*). Upon the docility and sagacity of many animals see also *Metaph.* i. 1, 980, a, 27 sqq.; *Eth.* iv. 7, 1141, a, 26; *Part. An.* ii. 1, 4, 648, a, 5, 650, b, 24. In the ninth book of his *Natural History* Aristotle treats not only of habits of animals in general but more especially of the traces of intelligence which they exhibit. Of all quadrupeds the sheep has the smallest amount of intelligence (c. 3, 610, b, 22); the stag, on the other hand, displays a large amount (c. 5). Bears, dogs, panthers, and many other animals find out the proper remedies against wounds and sickness, and the proper means of assistance against the attacks of other animals (c. 6). With what intelligence again do swallows build their nests, and the pigeon provide for his mate and his young (c. 7); how cunningly partridges manage their love-affairs, and hatch and protect their broods (c. 8); how cleverly the crane directs his flight (c. 10); what design is displayed in the habits of birds in general, in the choice of a habitation, in the building of their nests, in the search for food (see *ibid.* c. 11–36). In like manner Aristotle remarks upon the cunning of many marine animals (c. 37), the industry of spiders (c. 39), of bees, wasps, and the like (c. 40–43), the docility and cleverness of elephants (c. 46), the moral instinct of camels and horses (c. 47), the humane disposition of dolphins (c. 48), &c.; with all which it is only natural that much that is questionable should be mixed up.

to the higher rank which animals occupy in the scale of animated nature. Their more numerous and various functions require a greater number and complexity of organs. Aristotle discusses all these organs in his treatise on the *Parts of Animals*.[1] First (ii. 2–9) he describes the homogeneous materials of which they consist—blood, fat, marrow, brain, flesh, bones, sinews, veins, skin, &c. The fundamental constituents of these materials are the elements of warmth, cold, dryness, and humidity.[2] Flesh, or that which corresponds to it amongst the lower classes of animals,[3] is the most essential and indispensable portion of the animal economy: for Aristotle, unacquainted as he was with the nerves, believed that flesh was the medium of the most universal of the senses, that of touch, and therefore the most universal organ of animal life.[4] Bones, sinews, and external coverings serve to unite and protect the flesh.[5] The blood[6] furnishes the nourishment of the various solid

[1] More accurately in the last three books of this treatise; see i. 92, n. 1, and i. 89, n. 2, *supra*, on these and the Ἀνατομαί.

[2] *Part. An.* ii. 2 *init.* – c. 3, 650, a, 2, referring to the different respects in which one thing is said to be warmer than another, and the transition from one state into another.

[3] Cf. p. 26, n. 2, *supra*.

[4] *Part.* ii. 8 *init.*: πρῶτον [σκεπτέον] περὶ σαρκὸς ἐν τοῖς ἔχουσι σάρκας, ἐν δὲ τοῖς ἄλλοις τὸ ἀνάλογον· τοῦτο γὰρ ἀρχὴ καὶ σῶμα καθ' αὑτὸ τῶν ζῴων ἐστίν. δῆλον δὲ κατὰ τὸν λόγον· τὸ γὰρ ζῷον ὁριζόμεθα τῷ ἔχειν αἴσθησιν, πρῶτον δὲ τὴν πρώτην· αὕτη δ' ἐστὶν ἁφή, ταύτης δ' αἰσθητήριον τὸ τοιοῦτον μόριόν ἐστιν. On the importance of flesh for sensation see, further, c. 1, 647, a, 19, c. 3, 650, b, 5, c. 10, 656, b, 34; *H. An.* i. 3, 4, 489, a, 18, 23; but especially *De An.* ii. 11, 422, b, 19, 34 sqq. 423, b, 1 sqq. 29, iii. 2, 426, b, 15. The organ of sensation itself is the heart (see *infra*).

[5] *Part.* ii. 8, 653, b, 30 sqq.

[6] The blood, or that which corresponds to it (see p. 26, n. 1, *sup.*), is most immediately food (τελευταία or ἐσχάτη τροφὴ) to the animal body (*De Somno*, c. 3, 456, a, 34; *Part.* ii. 3, 650, a, 32 sqq. c. 4, 651, a, 12; *Gen. An.*

constituents. The brain serves to cool the blood,[1] and is therefore composed of the cold elements of earth and water;[2] the marrow[3] and other parts[4] are made of surplus blood. Here, therefore, we may notice a graduated scale of means and ends. The homogeneous elements of the body exist for the sake of the organic,[5] but while some of them fulfil their end directly as parts of the organism, a second class serves merely as nutriment to the former, and a third consists of the superfluous remnant of the second,[6] which nevertheless has a use of its own in the economy of Nature and is not lost.[7] Each of these materials is of superior or inferior quality according to its purpose, so that even here different animals and different parts of the same animal do not stand upon the same level.[8] The soul resides primarily

ii. 4, 740, a, 21, and *passim*); on its quality, therefore, much of the life both of soul and body depends; *Part. An. ibid.*, and c. 2, 648, a, 2 sqq. According to the latter passage, thick warm blood is more conducive to strength, thin cool blood to sense perception, and thought. The best mixture is one of warm but thin and pure blood.

[1] *Ibid.* c. 7 (see p. 16, n. 6, *sup.*). Only animals which have blood, therefore, have a brain (*ibid.* 652, b, 23); human beings have a proportionately larger one than beasts, men than women (653, a, 27), because their blood, being warmer, requires more to cool it. Bloodless animals, however, have something analogous to the brain; see p. 26, n. 8, *supra*.

[2] *Ibid.* 652, b, 22.

[3] *Ibid.* c. 6 *fin.*: [ὁ μυελὸς] τῆς αἱματ κῆς τροφῆς τῆς εἰς ὀστᾶ καὶ ἄκανθαν μεριζομένης ἐστὶ τὸ ἐμπεριλαμβανόμενον περίττωμα πεφθέν.

[4] Such as the seed, which is afterwards discussed, and the milk (*Gen. An.* iv. 8).

[5] See i. 517, n. 6, ii. p. 3, n. 2, and p. 28, n. 1, *supra*.

[6] *Part.* ii. 2, 647, b, 20 sqq.

[7] See i. 465, n. 2, *supra*.

[8] *Part.* ii. 2, 647, b, 29 (after explaining the three kinds of ὁμοιομερῆ): αὐτῶν δὲ τούτων αἱ διαφοραὶ πρὸς ἄλληλα τοῦ βελτίονος ἕνεκέν εἰσιν, οἷον τῶν τε ἄλλων καὶ αἵματος πρὸς αἷμα· τὸ μὲν γὰρ λεπτότερον τὸ δὲ παχύτερον καὶ τὸ μὲν καθαρώτερόν ἐστι τὸ δὲ θολερώτερον, ἔτι δὲ τὸ μὲν ψυχρότερον τὸ δὲ θερμότερον ἔν τε τοῖς μορίοις τοῦ ἑνὸς ζῴου (τὸ γὰρ ἐν τοῖς ἄνω μέρεσι πρὸς τὰ κάτω μόρια διαφέρει ταύταις ταῖς διαφοραῖς) καὶ ἑτέρῳ πρὸς ἕτερον. Similar differences in flesh are referred to,

in the Pneuma, which is the cause of vital heat, and which in turn has its chief seat in the heart.[1]

If we proceed to consider the organs formed of homogeneous materials, we must notice in the first place that animals possess a point of functional unity, and consequently an organ in which their vitality is centred:[2] in creatures that have blood this organ is the heart, in others something similar;[3] it is only some of the very lowest classes that so closely resemble plants as to possess at least potentially several points of vitality and to continue living after they have been cut in pieces.[4] This central organ is formed at the very beginning of life in every animal, and cannot be destroyed without its dissolution.[5] Its function[6]

*Part.* iii. 3, 665, a, 1, c. 7, 670, b, 2. *De An.* ii. 9, 421, a, 25: *οἱ μὲν γὰρ σκληρόσαρκοι ἀφυεῖς τὴν διάνοιαν, οἱ δὲ μαλακόσαρκοι εὐφυεῖς.*

[1] Cf. p. 6, n. 2, *supra.*

[2] See p. 33, n. 4, *supra.*

[3] See p. 26, n. 7, *supra*, and *Gen. An.* ii. 4, 738, b, 16: *ἀρχὴ γὰρ τῆς φύσεως ἡ καρδία καὶ τὸ ἀνάλογον, τὸ δὲ κάτω προσθήκη καὶ τούτου χάριν. De Vita et M.* c. 2–4; *Part.* iii. 4, 665, b, 9 sqq. c. 5, 667, b, 21. For a more detailed account of the parts which, according to Aristotle, represent the heart, and are always situated in the centre of the body, see *Part.* iv. 5, 681, b, 12–682, b, 8; on their situation see further, *Juv. et Sen.* 2, 468, a, 20.

[4] Aristotle remarks this, *De An.* ii. 2, 413, b, 16 sqq.; *Juv. et Sen.* 2, 468, a, 26 sqq.; *Ingr. An.* 7, 707, a, 27 sqq.; *Part. An.* iii. 5, 667, b, 23, iv. 5, 682, b, 1 sqq. (see p. 33, n. 5, *supra*), of many insects (which have not yet been all identified; cf. MEYER, *Arist. Thierk.* 224).

[5] *Part.* iii. 4, 666, a, 10, 20, 667, a, 32; *De Vita,* 3, 468, b, 28; *Gen. An.* ii. 4, 739, b, 33, 740, a, 24, where the view of Democritus is controverted which represented the outer portions as being formed first, 'as though we were dealing with figures of wood or stone and not with living beings, whose evolution proceeds from within outwards.'

[6] MEYER, *Arist. Thierk.* 425 sqq. The blood is boiled out of the food by means of the heat of the heart (*De Respir.* 20, 480, 2 sqq.); the circulation of the blood, as well as the distinction between veins and arteries (*Part.* iii. 4, 666, a, 6. *De Respir.* 20, 480, a, 10, and the whole description of the system of the veins, *Part.* iii. 5; *Hist. An.* iii. 3), was unknown to Aristotle, who, however, was acquainted with the beating of the heart and

consists partly in preparing the blood, and partly in producing sensation and motion. Next in importance

the pulse (cf. i. 262, n. 1, *sup.*) and mentions the different quality of the blood (see *infra*, and cf. p. 40, n. 8, *supra*). He also accurately describes many of the veins (*Part.* iii. 5, *Hist. An.* iii. 3, 513, a, 12 sqq. cf. PHILIPPSON, Ὕλη ἀνθρ. p. 28). The veins have their source, not, as Hippocrates and his school held, in the head, but in the heart (*Part.* ii. 9, 654, b, 11, iii. 4, 665, b, 15, 27, c. 5 *init.*; *Hist. An.* iii. 3, 513, a, 21; *Gen. An.* ii. 4, 740, a, 21; *De Somno*, 3, 456, b, 1). The separation between the purer and the thicker blood is effected, at least in the case of all the larger animals, in the heart, the former passing upwards, the latter downwards (*De Somno*, c. 3, 458, a, 13 sqq.; *Part.* iii. 4, 665, b, 27 sqq.; *Hist. An.* iii. 19, 521, a, 9). The native heat of the heart enables the blood, and this again enables the body, to retain its heat (*Part.* iii. 5, 667, b, 26); the heart, *Part.* iii. 7, 670, a, 24, is therefore compared to the Acropolis, as the place in which Nature maintains her sacred fire. The boiling of the blood produces (*v.* MEYER) steam in the heart, causing the latter to heave and thus expanding the chest; into the space, thus left vacant, air rushes and so cools the whole that it again contracts until the steam which is generated in the heart again produces the pulsation which is transmitted through all the veins and is accompanied by respiration (*Part.* ii. 1, 647, a, 24, iii. 2, 665, b; *Hist. An.* i. 16, 495, b, 10; *De Respir.* 20, 479, b, 30, 480, a, 2, 14, c. 21, 480, a, 24, b, 17). As the cause of respiration, the heart is also the cause of motion; *De Somno*, 2, 456, a, 5, 15, cf. *Ingr. An.* c. 6, 707, a, 6 sqq. The sinews, moreover, have their source in the heart, which is itself very sinewy, although they are not wholly dependent upon it (*Hist. An.* iii. 5; *Part.* iii. 4, 666, b, 13). Aristotle, however, does not explain how the limbs are set in motion by the heart (see MEYER, p. 440). The heart is the primary seat of sensation and of the sensitive life: *Part. An.* ii. 1, 647, a, 24 sqq. c. 10, 656, a, 27 sqq. b, 24, iii. 4, 666, a, 11, c. 5, 667, b, 21 sqq., iv. 5 (see p. 41, n. 3, *supra*); *De Somno*, 2, 456, a, 3; *Juv. et Sen.* 3, 469, a, 10 sqq. b, 3. Cf. Ch. X., part 3, *infra*. The blood vessels are the channels by means of which sensations reach the heart (*Part.* iii. 4, 666, a, 16), although the blood itself is without sensation (*ibid.* and *Part.* ii. 3, 650, b, 3, c. 7, 652, b, 5). The sense of touch transmits itself by means of the flesh (see p. 39, n. 4, *supra*), the others through passages (πόροι) which extend from the organs of sense to the heart (*Gen. An.* v. 2, 781, a, 20), and by which we must suppose him to mean the veins, as MEYER, p. 427 sq., and PHILIPPSON, passage referred to above (in treating of the πόροι which lead to the brain: *Hist. An.* i. 16, 495, a, 11, iv. 8, 533, a, 12; *Part. An.* ii. 10, 656, b, 16) show; cf. *Juv. et Sen.* 3, 469, a, 12; *Part.* ii. 10, 656, a, 29; *Gen. An.* ii. 6, 744, a, 1;

to the heart is the brain,[1] the purpose of which, as we already know,[2] is to cool the blood and temper the warmth arising from the heart. Aristotle directly contradicts the notion that it is the seat of sensation.[3] The lungs are also used for cooling the blood, the windpipe[4] supplying them with air.[5] With a view to this purpose, their nature is varied according to the greater or less amount of internal heat an animal possesses. The lungs of mammals are the fullest of blood; those of birds and amphibious beasts, of air.[6] Fishes, which are

*Hist. An.* iii. 3, 514, a, 19, i. 11, 492, a, 21. In the case of the senses of smell and hearing, between the objects perceived and the veins that lead to the heart, there is further interposed the πνεῦμα σύμφυτον; *Gen. An.* ii. 6, 744, a, 1; *Part.* ii. 16, 659, b, 15. The nerves are unknown to Aristotle; cf. PHILIPPSON, *ibid.* and MEYER, p. 432: if he was led to the theory of the above-mentioned πόροι — by which SCHNEIDER (*Arist. Hist. An.* iii. 47) and FRANTZIUS (*Arist. üb. die Theile d. Thiere*, p. 280, 54) understand him to mean nerves—by the actual observation of certain of the nerves, this of itself would be a proof that he did not know them *as* nerves. See also Ch. X. part 3.

[1] *Part.* iii. 11, 673, b, 10.

[2] See p. 40, n. 1, *supra.* The spinal marrow is united to the brain for the purpose of being cooled by it.

[3] *Part.* ii. 10, 656, a, 15 sqq. (where Aristotle has chiefly in view PLATO'S *Timæus*, 75, B sq.); cf. MEYER, p. 431.

[4] See *Part.* iii. 3. *Hist. An.* iv. 9, where the windpipe is fully treated with especial reference to its function as the vocal organ.

[5] For the discussion of this point in detail, v. *Part.* iii. 6, and the treatise π. Ἀναπνοῆς, especially c. 7, 474, a, 7 sqq. c. 9 sq. c. 13, c. 15 sq. The veins branch out from the heart to the lungs and serve to carry the air from the latter to the former; *Hist. An.* i. 17, 496, a, 27; MEYER, p. 431 (see *supra* and *Ph. d. Gr.* i. 730, 4). Plato had already assumed that the heart was cooled by the lungs.

[6] *Respir.* 1, 470, b, 12, c. 10, 475, b, 19 sqq. c. 12 *init.*; *Part.* iii. 6, 669, a, 6, 24 sqq. It is interesting to observe how Aristotle's imperfect acquaintance with the facts lead him to false conclusions. His observations had led him to see that there is a connection between respiration and animal heat; but as he had no conception either of the oxidation of the blood or of the nature of combustion generally, or of the circulation of the blood, he held that its heat was merely cooled and not nourished by respiration. In *Respir.* c. 6, 473, as he expressly controverts the view

less in need of cooling organs, are provided with gills in order to expel the water absorbed with their food after it has performed its cooling function.[1] Bloodless animals are without lungs, which, on account of their colder nature, they do not need.[2] The nutritive matter from which the blood is formed in the heart,[3] is prepared by the digestive organs,[4] which are separated from the nobler viscera in the case of all full-blooded animals by the midriff, in order that the seat of the sensitive soul may not be disturbed in its operations by the warm steam rising from the food.[5] The food is

that the air which is inhaled serves for food to the internal fire.

[1] *Respir.* 10, 476, a, 1 sqq. 22, b, 5, c. 16; *H. An.* ii. 13, 504, b, 28, and other passages; see p. 26, n. 9, *supra*. The earlier view that fish also breathe air, Aristotle expressly controverts, *Respir.* c. 2, 3. A solution of the question was only possible (as MEYER remarks, p. 439) after the discovery of the conversion of gases.

[2] *Part.* iii. 6, 669, a, 1; *Respir.* c. 9 (see p. 7 sq. *supra*), c. 12, 476, b, 30. Aristotle knows, indeed, of the respiratory organs of some bloodless animals, but he assigned to them another function.

[3] In *Gen. et Corr.* ii. 8, 335, a, 9 sqq., *De Sensu*, 5, 445, a, 17, Aristotle remarks generally of plants as well as animals that this material is a mixture of all the elements; see i. 482, n. 3, *sup.* That which properly furnishes nutrition is the sweet part, for this, being lighter, is boiled away by the heat, while that part which is bitter and heavy is left behind; all else serves merely to season its sweetness (*De Sensu*, 4, 442, a, 2 sqq., cf. *Gen. An.* iii. 1, 750, b, 25; *Meteor.* ii. 2, 355, b, 5; *Part.* iv. 1, 676, a, 35). Fat is sweet (*De Sensu*, 4, 442, a, 17, 23; *Long. V.* 5, 467, a, 4); sweet blood is the more wholesome (*Part.* iv. 2, 677, a, 27), and fat is well-boiled, nutritious blood (*Part.* ii. 5, 651, a, 21).

[4] The teeth perform merely a preliminary function (*Part.* ii. 3, 650, a, 8). On the mouth, as the organ for taking up the food into the system, which, however, serves several other purposes as well, see *Part.* ii. 10 *init.* (cf. p. 19, n. 1, *supra*), c. 16, 659, b, 27 sqq., iii. 1; *De Sensu*, 5, 445, a, 23.

[5] *Part.* iii. 10, 672, b, 8–24; cf. *Ph. d. Gr.* i. p. 729. That the vegetable soul (the φύσις) is situated below the midriff, is said also *Gen. An.* ii. 7, 747, a, 20. Cf. p. 41, n. 3, *supra*.

subjected to a preliminary process of preparation in the stomach,[1] and reduced to a fluid state, which admits of its entering the body.[2] It passes by evaporation into the veins that surround the stomach, and thence into the heart, where it is converted into pure blood.[3] Leaving the heart, it is carried to the different parts of the body, according to their several necessities[4] The passage of the blood from the stomach into the veins is effected by the mesentery, the tendrils of which are as it were the roots or suckers by means of which animals absorb their food from the stomach, as plants do from the earth.[5] The fatty covering of the epiploon causes an increase of digestive warmth in the abdomen,[6] while the same function is performed for the blood by the liver and spleen,[7] which also serve as a kind of anchor by which the network of veins is secured.[8] On the

[1] The nature of which in the different animals is described *Part.* iii. 14, 674, a, 21–675, a, 30; *H. An.* ii. 17, 507, a, 24–509, b, 23, iv. 1, 524, b, 3, c. 3, 527, b. 22, &c.

[2] Cf. *Part.* ii. 2, 647, b, 26.

[3] *Part.* ii. 3, 650, a, 3–32, *De Somno*, 3, 456, b, 2 sqq.

[4] It is pointed out, *Gen. An.* iv. 1, 766, a, 10, ii. 6 (see p. 19, n. 2, *supra*), *Meteor.* ii. 2, 355, b, 9, that each part is formed and nourished out of suitable materials, the nobler parts of better materials, the lower out of inferior; but we are not told how this is effected. From passages such as *Gen. An.* iv. 1, 766, b, 8, ii. 3, 737, a, 18, i. 19, 726, b, 9, cf. ii. 4, 740, b, 12 sqq., we gather merely that Aristotle supposes the blood as the ἐσχάτη τροφὴ to pass spontaneously into those parts for which it is destined.

[5] *Part.* iv. 4, 678, b, 6 sqq. ii. 3, 650, a, 14 sqq. According to these passages the stomach serves the same purpose for animals, as the earth does for plants; it is the place where their food is kept and prepared for use.

[6] *Part.* iv. 3, 677, b, 14, where an attempt is made to explain the formation of the epiploon physically (ἐξ ἀνάγκης).

[7] *Part.* iii. 7, 670, a, 20 sqq.

[8] *Part.* iii. 7, 670, a, 8 sqq. (cf. c. 9, 671, b, 9) where the same remark is made of the kidneys and the intestines generally (similarly Democritus compared the navel of the child in the mother to an anchor, see *Part.* i. 807, 6). It has already been shown (p. 20, n. 1, *supra*) that the spleen

other hand, the gall is only useless matter which has been rejected by the blood.[1] The full-blooded animals, which on account of their warm nature need more fluid nourishment, are provided in their bladder and kidneys with special organs for rejecting the surplus matter which thus gains admittance into the body.[2] Corresponding to the mouth, which receives food, and the gullet, which conducts it to the stomach,[3] all animals possess a conduit in their bowels for expelling the useless refuse of their nourishment.[4] But in the case of some animals a portion of the digestive function is performed by the bowels.[5] The narrowness and windings of these passages serve to moderate the appetite, and therefore the most voracious animals are those which have wide and straight canals like fishes;[6] but the real need of nourishment depends upon the amount of

is not equally a necessity to all animals. Bloodless animals want this intestine as well as fat; *Part.* iv. 5, 678, a, 25 sqq. ii. 5, 651, a, 25. For further description of the form of these organs in different animals, see *Part.* iii. 12, 673, b, 20, 28, c. 4, 666, a, 28, c. 7, 670, b, 10. *De An.* ii. 15, 506, a, 13.

[1] See p. 20, n. 3, *supra*. Since only sweet substances are nutritious, the bitterness of gall shows that it is a περίττωμα, *Part.* iv. 2, 677, a, 24. It is accordingly not found in all animals; *ibid.* 676, b, 25, iii. 12, 673, b, 24; *H. An.* ii. 15, 506, a, 20, 31.

[2] *Part.* iii. 8, 9; *H. An.* ii. 16. Aristotle knew of exceptions to the above rule and found means of explaining them. His treatment of the fat of the kidneys, 672, a, 1 sqq., from the point of view both of physical necessity and of natural design is especially full and interesting.

[3] On the alimentary canal, which, however, is not found in all animals, see *Part.* iii. 14.

[4] *Part.* iii. 14, 674, a, 9 sqq. 675, a, 30, 656, b, 5.

[5] *Ibid.* 675, b, 28.

[6] *Ibid.* 675, b, 22: ὅσα μὲν οὖν εἶναι δεῖ τῶν ζῴων σωφρονέστερα πρὸς τὴν τῆς τροφῆς ποίησιν εὐρυχωρίας μὲν οὐκ ἔχει μεγάλας κατὰ τὴν κάτω κοιλίαν, ἕλικας δ' ἔχει πλείους καὶ οὐκ εὐθυέντερά ἐστιν. ἡ μὲν γὰρ εὐρυχωρία ποιεῖ πλήθους ἐπιθυμίαν, ἡ δ' εὐθύτης ταχυτῆτα ἐπιθυμίας &c. *Ibid.* 675, a, 18; *Gen. An.* i. 4, 717, a, 23 sqq.; PLATO, *Tim.* 72, E sq.

warmth or cold in the nature of the animal.[1] Support and protection are supplied to the softer parts by the framework of bones, or what corresponds to it in the lower animals.[2] All the bones of sanguineous animals start from the spine;[3] and here it is certain that Aristotle has the credit of being the first to indicate one of their common properties.[4] The limbs are united to the spine by means of sinews and joints, which connect them all without impeding motion.[5] With reference to motion and the organs of motion in their mechanical aspect, Aristotle has recorded several just observations.[6] In other cases he not unfrequently supports remarks of questionable value by artificial and inde-

[1] *Part.* iv. 5, 682, a, 22: τὸ γὰρ θερμὸν καὶ δεῖται τροφῆς καὶ πέττει τὴν τροφὴν ταχέως, τὸ δὲ ψυχρὸν ἄτροφον.

[2] *Part.* ii. 8, 653, b, 33 sqq.; see p. 39, n. 5, *supra*; *ibid.* c. 9, 654, b, 27 sqq. On the parts analogous to the bones, see p. 26, n. 4, *supra*.

[3] *Part.* ii. 9, 654, b, 11: ἀρχὴ δὲ τῶν μὲν φλεβῶν ἡ καρδία, τῶν δ' ὀστῶν ἡ καλουμένη ῥάχις τοῖς ἔχουσιν ὀστᾶ πᾶσιν, ἀφ' ἧς συνεχὴς ἡ τῶν ἄλλων ὀστῶν ἐστὶ φύσις.

[4] *Hist. An.* iii. 7, 516, b, 22: πάντα δὲ τὰ ζῷα ὅσα ἔναιμά ἐστιν, ἔχει ῥάχιν ἢ ὀστώδη ἢ ἀκανθώδη.

[5] For the full treatment of this subject see *Part.* ii. 9, 654, b, 16 sqq. On one or two remarkable omissions in Aristotle's Osteology, *e.g.* of all mention of the pelvis and of the parallel between the legs of animals and human beings, see MEYER, p. 441 sq.

[6] *E. g.* in the treatise π. πορείας ζῴων the statements: that all that moves requires a fulcrum (c. 3); that two organic parts at least are necessary to produce motion, one to sustain the pressure and one to exercise it (*ibid.* 705, a, 19); that there is always an even number of feet (c. 8, 708, a, 21; *Hist. An.* i. 5, 489, b, 22); that all forward motion in organic beings is produced by bending and stretching (c. 9, c. 10, 709, b, 26; this chapter further contains discussions on the flight of birds and insects, and the importance of the different organs of flight); that in order that he may stand upright man may not have more than two legs, and that the upper parts of his body must be lighter in proportion to the lower than in the case of the lower animals (c. 11 *init.*). The same is true of many of the remarks in c. 12–19 on the bending of the joints and the means of locomotion both in men and in different animals.

monstrable assumptions.[1] Nor can we pretend that he made the least advance towards a physiological explanation of the circumstances which affect and accompany locomotion.[2]

One of the most important distinctions between animals and vegetables is the difference in their manner of reproduction.[3] While vegetables have no sex, the separation of the sexes begins with animals, their reunion being only transiently effected for purposes of reproduction. Since animals are not intended for mere

[1] Thus, c. 4 sq. (cf. i. 497, n. 1, *sup.*), he endeavours, not without much subtilty, to establish the position that motion always proceeds from the right, although he obviously derives it, not from scientific observation, but from the dogmatic presupposition (c. 5, 706, b, 11) that the top is superior to the bottom, the front to the back, the right to the left, and that therefore the *ἀρχαὶ* must have their seat on the upper front and right side. Albeit he remarks himself that we may equally say that these are the superior situations because the *ἀρχαὶ* have their seat in them. On the latter point cf. *ibid.* 705, a, 29 sqq.; *De Cœlo*, ii. 2, 284, b, 26: *ἀρχὰς γὰρ ταύτας λέγω ὅθεν ἄρχονται πρῶτον αἱ κινήσεις τοῖς ἔχουσιν. ἔστι δὲ ἀπὸ μὲν τοῦ ἄνω ἡ αὔξησις, ἀπὸ δὲ τῶν δεξιῶν ἡ κατὰ τόπον, ἀπὸ δὲ τῶν ἔμπροσθεν ἡ κατὰ τὴν αἴσθησιν.* He goes on to add, c. 6 sq., an equally artificial proof of the statement (which is made also c. 1, 704, a, 11, c. 10 *init.*; *Hist. An.* i. 5, 490, a, 25 sqq.) that sanguineous animals cannot move on more than four legs (*Hist. An.* he says plainly four). His account moreover, c. 12 sqq., of the walk of animals, as MEYER shows, 441 sq., is not free from error.

[2] We are told, indeed, that all motion proceeds from the heart, but it is not explained how this is possible (see p. 41, n. 6, *supra*). The explanation proposed, *π. πνεύματος*, c. 8 *init.*, that the vital spirit streams through the sinews and is the moving force, is not Aristotelian.

[3] The work in which Aristotle has treated of this question, *π. ζῴων γενέσεως*, has received the warmest recognition even from scientific men of the present day. LEWES, who is not certainly in other respects inclined to place an exaggerated estimate upon Aristotle's scientific investigation, agrees with AUBERT and WIMMER (p. v. sq. of their edition) in expressing his admiration of this treatise, which handles some of the deepest problems of biology with a masterly grasp, astonishing at so early a time, and is even less antiquated at the present day than Harvey's celebrated work (*Arist.* § 413).

life, but also for sensation, it follows that the exercise of their reproductive[1] functions must be confined to certain occasions.[2] Only the ostreaceous tribes and zoophytes[3] are sexless; placed upon the boundary which separates the animal from the vegetable kingdom, they are deprived of the functions which belong to both: they resemble plants in not propagating themselves by copulation, and animals in not being generated from seeds or fruit. They are, in fact, reproduced by a process of spontaneous generation from slime.[4] And the like ambiguity of nature is displayed in their case with regard to locomotion.[5]

Passing to the comparison of the sexes, we may remark that the male and female are related to each other as form and matter.[6] The former is the active, the latter is the passive, part; the one bestows the motive and plastic force, the other supplies the material to be moulded;[7]

[1] The ἔργον τοῦ ζῶντος, the ἔργον κοινὸν τῶν ζώντων πάντων.

[2] *Gen. An.* i. 23, from which quotation has already been made, p. 29, *supra*.

[3] Besides a few others, to be mentioned hereafter, which must be regarded as exceptions.

[4] *Gen. An.* i. 23, 731, b, 8, c. 1, 715, a, 25, b, 16, ii. 1, 732, a, 13, iii. 11, 761, a, 13–32. Only such relatively simple organisms can be produced in this way, and accordingly if it be true, as some hold, that men and quadrupeds are sprung from the earth, they must have been evolved from worms or eggs which preceded them (*Gen. An.* iii. 11, 762, b, 28 sqq.). Aristotle, however, does not himself share this view, although it is to be found in Theophrastus.

[5] Separation of the sexes is expressly confined to the ζῷα πορευτικά, and as testaceous animals are described in the passage just referred to as μεταξὺ ὄντα τῶν ζῴων καὶ τῶν φυτῶν, and accordingly of neuter gender, it is said of them, *Ingr. An.* 19, 714, b, 13: τὰ δ' ὀστρακόδερμα κινεῖται μὲν, κινεῖται δὲ παρὰ φύσιν· οὐ γάρ ἐστι κινητικὰ, ἀλλ' ὡς μὲν μόνιμα καὶ προσπεφυκότα κινητικὰ, ὡς δὲ πορευτικὰ μόνιμα. It is previously said that they move as animals with feet would move if their legs were cut off.

[6] See i. 353, *supra*.

[7] *Gen.* i. 2, 716, a, 4: τῆς γενέσεως ἀρχὰς ἄν τις οὐχ ἥκιστα θείη τὸ θῆλυ καὶ τὸ ἄρρεν, τὸ μὲν ἄρρεν ὡς τῆς κινήσεως καὶ τῆς

the one gives the soul, the other the body.[1] Aristotle maintains this opinion so firmly that he denies any participation on the part of the male seed in the material composition of the embryo,[2] declaring that it only communicates the necessary impulse to the substance derived from the female,[3] as is the case generally with form in its relation to matter, active to passive, propelling to propelled. In each of these cases the former does not enter into any material union with the latter principle, but only operates upon it.[4] Just for this reason, according to Aristotle, is the male distinct

γενέσεως ἔχον τὴν ἀρχὴν, τὸ δὲ θῆλυ ὡς ὕλης. c. 20, 729, a, 9: τὸ μὲν ἄρρεν παρέχεται τό τε εἶδος καὶ τὴν ἀρχὴν τῆς κινέσεως, τὸ δὲ θῆλυ τὸ σῶμα καὶ τὴν ὕλην. L. 29: τὸ ἄρρεν ἐστὶν ὡς κινοῦν, τὸ δὲ θῆλυ, ᾗ θῆλυ, ὡς παθητικόν. Again, c. 21, 729, b, 12, 730, a, 25, ii. 4, 738, b, 20–36, 740, b, 12–25, and *passim*; cf. also foll. notes.

[1] *Gen. An.* ii. 3 (see *supra*, p. 6, n. 2): τὸ τῆς γονῆς σῶμα, ἐν ᾧ συναπέρχεται τὸ σπέρμα τὸ τῆς ψυχικῆς ἀρχῆς. *Ibid.* 737, a, 29 (see p. 52, n. 2, *infra*) c. 4, 738, b, 25: ἔστι δὲ τὸ μὲν σῶμα ἐκ τοῦ θήλεος, ἡ δὲ ψυχὴ ἐκ τοῦ ἄρρενος.

[2] *Gen. An.* i. 21, 22: the young is formed in the mother, in whom lies the material on which the plastic force of the father is exercised but into which the male seed does not enter as any part of the embryo, ὥσπερ οὐδ' ἀπὸ τοῦ τέκτονος πρὸς τὴν τῶν ξύλων ὕλην οὔτ' ἀπέρχεται οὐθὲν, οὔτε μόριον οὐθέν ἐστιν ἐν τῷ γιγνομένῳ τῆς τεκτονικῆς, ἀλλ' ἡ μορφὴ καὶ τὸ εἶδος ἀπ' ἐκείνου ἐγγίνεται διὰ τῆς κινήσεως ἐν τῇ ὕλῃ, καὶ ἡ μὲν ψυχὴ, ἐν ᾗ τὸ εἶδος, καὶ ἡ ἐπιστήμη κινοῦσι τὰς χεῖρας . . . αἱ δὲ χεῖρες καὶ τὰ ὄργανα τὴν ὕλην.

[3] He compares the seed in this respect, *Gen. An.* i. 20, 729, a, 11, ii. 4, 739, b, 20, with the rennet which causes milk to curdle. *Ibid.* iv. 4, 772, a, 22, however, deprecates too exact an application of this comparison.

[4] *Gen. An.* i. 21, 729, b, 1: does the male seed contribute to the formation of the young ὡς ἐνυπάρχον καὶ μόριον ὂν εὐθὺς τοῦ γινομένου σώματος, μιγνύμενον τῇ ὕλῃ τῇ παρὰ τοῦ θήλεος, ἢ τὸ μὲν σῶμα οὐθὲν κοινωνεῖ τοῦ σπέρματος, ἡ δ' ἐν αὐτῷ δύναμις καὶ κίνησις; Aristotle decides for the second of these views; for, on the one hand, οὐ φαίνεται γιγνόμενον ἓν ἐκ τοῦ παθητικοῦ καὶ τοῦ ποιοῦντος ὡς ἐνυπάρχοντος ἐν τῷ γινομένῳ τοῦ ποιοῦντος, οὐδ' ὅλως δὴ ἐκ τοῦ κινουμένου καὶ κινοῦντος, and, on the other, it is supported by several other facts which show that generation is possible without material contact between the male seed and the female matter, as in the case of the subsequent fructification of wind-eggs.

from the female, wherever it is possible; for if the form is superior to the matter, the more distinct they are, the better the result must be.[1] Accordingly, he is careful to distinguish between the procreative substance of the male, which is the seed, and that of the female, which he identifies with the catamenial discharge. He holds that they are both, generically, of the same sort and the same origin, being a secretion of nutritive matter, a product of the blood.[2] This fluid, however, is secreted in larger quantities and of a cruder sort with the weaker sex, forming the menses of women or what corresponds to them among other animals; in men, however, it becomes seed.[3] Thus the same substance

[1] *Gen. An.* ii. 1, 732, a, 3: *βελτίονος δὲ καὶ θειοτέρας τὴν φύσιν οὔσης τῆς αἰτίας τῆς κινούσης πρώτης, ῃ ὁ λόγος ὑπάρχει καὶ τὸ εἶδος, τῆς ὕλης, βέλτιον καὶ τὸ κεχωρίσθαι τὸ κρεῖττον τοῦ χείρονος. διὰ τοῦτ' ἐν ὅσοις ἐνδέχεται καὶ καθ' ὅσον ἐνδέχεται κεχώρισται τοῦ θήλεος τὸ ἄρρεν.*

[2] The detailed investigation of the subject is to be found in *Gen. An.* i. 17–20. Aristotle begins (721, b, 11 sqq. cf. c. 20, 729, a, 6, 730, a, 11) by denying the opinion that the semen is a secretion drawn from all parts of the body (on which cf. ZELL. *Ph.d.Gr.* i. 805, 2, 720, 6, AUBERT-WIMMER, p. 7 of their ed.). He then (724, a, 14 sqq.) shows that *σπέρμα* must be one of two things, either an excrement from the organic parts of used-up matter (a *σύντηγμα*) or a surplus of nutritive matter (a *περίττωμα*), and in the latter case either a useless or a useful surplus. It cannot be a *σύντηγμα*, nor can it be a useless *περίττωμα*; it must therefore be a part of the useful *περίττωμα* of the body. But the most useful nutritive substance is the *τροφὴ ἐσχάτη* or the blood; the *σπέρμα* is therefore *τῆς αἱματικῆς περίττωμα τροφῆς, τῆς εἰς τὰ μέρη διαδιδομένης τελευταίας* (c. 19, 726, b, 9). This is the reason why children resemble their parents: *ὅμοιον γὰρ τὸ προσελθὸν πρὸς τὰ μέρη τῷ ὑπολειφθέντι· ὥστε τὸ σπέρμα ἐστὶ τὸ τῆς χειρὸς ἢ τὸ τοῦ προσώπου ἢ ὅλου τοῦ ζῴου ἀδιορίστως χεὶρ ἢ πρόσωπον ἢ ὅλον ζῷον· καὶ οἷον ἐκείνων ἕκαστον ἐνεργείᾳ, τοιοῦτον τὸ σπέρμα δυνάμει* (*ibid.* c. 13). On the properties and material composition of the semen, see *Gen. An.* ii. 2.

[3] *Ibid.* 726, b, 30 sqq. c. 20, 729, a, 20. Aristotle, c. 19, 727, a, 15 sqq. explains the weaker veins, the paler colour, the smaller quantity of hair, and the smaller bodies of women on the ground of defective supply of blood.

receives so different an application in the two cases, that where it takes the one form it cannot exhibit the other.[1] We see at once how well this theory of the two procreative substances fits into our philosopher's views about the generative process and the relation of the sexes. If the menses consist of the same material as the seed, except that it has not received in them the same development, we may compare them to imperfect seed.[2] So they contain potentially what the seed possesses actually; they are the matter, while the seed communicates the impulse to development and form. Being a remnant of the essential nutriment, the menses and the seed continue even after their union in the embryo the motion which they previously maintained in the bodies of the procreative pair, and by the exercise of their native impulse to growth and nutrition produce something that resembles its parents.[3] If the being to be brought forth were merely vegetable, the

[1] C. 19, 727, a, 25: ἐπεὶ δὲ τοῦτ' ἐστὶν ὃ γίγνεται τοῖς θήλεσιν ὡς ἡ γονὴ τοῖς ἄρρεσιν, δύο δ' οὐκ ἐνδέχεται σπερματικὰς ἅμα γίνεσθαι ἀποκρίσεις, φανερὸν ὅτι τὸ θῆλυ οὐ συμβάλλεται σπέρμα εἰς τὴν γένεσιν. εἰ μὲν γὰρ σπέρμα ἦν, τὰ καταμήνια οὐκ ἂν ἦν· νῦν δὲ διὰ τὸ ταῦτα γίγνεσθαι ἐκεῖνο οὐκ ἔστιν. It is shown also, c. 20, cf. ii. 4, 739, a, 20, that there is nothing else that can be taken for female semen.

[2] *Gen. An.* ii. 3, 737, a, 27: τὸ γὰρ θῆλυ ὥσπερ ἄρρεν ἐστὶ πεπηρωμένον, καὶ τὰ καταμήνια σπέρμα, οὐ καθαρὸν δέ. ἓν γὰρ οὐκ ἔχει μόνον, τὴν τῆς ψυχῆς ἀρχήν, as may be seen in the case of wind-eggs, which are produced without the co-operation of the male. Cf. c. 5, 741, a, 15.

[3] *Ibid.* 737, a, 18: τοῦ δὲ σπέρματος ὄντος περιττώματος καὶ κινουμένου κίνησιν τὴν αὐτὴν καθ' ἥνπερ τὸ σῶμα αὐξάνεται μεριζομένης τῆς ἐσχάτης τροφῆς, ὅταν ἔλθῃ εἰς τὴν ὑστέραν συνίστησι καὶ κινεῖ τὸ περίττωμα τὸ τοῦ θήλεος τὴν αὐτὴν κίνησιν ἥνπερ αὐτὸ τυγχάνει κινούμενον κἀκεῖνο. καὶ γὰρ ἐκεῖνο περίττωμα καὶ πάντα τὰ μόρια ἔχει δυνάμει, ἐνεργείᾳ δ' οὐθέν. καὶ γὰρ τὰ τοιαῦτ' ἔχει μόρια δυνάμει, ᾗ διαφέρει τὸ θῆλυ τοῦ ἄρρενος. ὥσπερ γὰρ καὶ ἐκ πεπηρωμένων ὁτὲ μὲν γίνεται πεπηρωμένα ὁτὲ δ' οὔ, οὕτω καὶ ἐκ θήλεος ὁτὲ μὲν θῆλυ ὁτὲ δ' οὔ, ἀλλ' ἄρρεν. τὸ γὰρ θῆλυ &c. (see preced. n.). Cf. i. 19, 726, b, 13 (see n. 2 on preceding page).

female, he holds, would suffice for its development, since the nutritive forces of the soul are already active in her portion of the procreative substance. For the birth of an animal, on the other hand, male seed is indispensable, since it alone contains the germ of sensitive life.[1] The matter of the male having thus begun to operate actively upon the passive substance of the female, an effect is produced corresponding to the nature of both. Their proper nature grows and develops from the two elements, not because the materials are spatially attracted to their like, but because each element when once set in motion moves in the direction for which it has a natural predisposition[2]—because, in fact, the seed

[1] *Gen. An.* ii. 5, 741, a, 9: if the material for the birth is contained in the female περίττωμα and the female portion of the same had the same soul as the male, why is it unproductive by itself? αἴτιον δ' ὅτι διαφέρει τὸ ζῷον τοῦ φυτοῦ αἰσθήσει . . . εἰ οὖν τὸ ἄρρεν ἐστὶ τὸ τῆς τοιαύτης ποιητικὸν ψυχῆς. ὅπου κεχώρισται τὸ θῆλυ καὶ τὸ ἄρρεν, ἀδύνατον τὸ θῆλυ ἐξ αὐτοῦ γεννᾷν ζῷον. It is seen, however, in the case of wind-eggs that the female is to a certain extent capable of unaided production. These have a certain δύναμις ψυχική, although only of the lowest kind, viz. θρεπτική, but as animals possess a sensitive soul as well, no animal can come from them. If there were animals of which no males are to be found, as perhaps is the case with the red sea mullet (although this is still far from certain), in such cases the female would be self-begotten. On the other hand, where there is a separation of the sexes this is impossible; otherwise the male would serve no purpose; whereas in reality it is from the male that the sensitive soul comes at the beginning.

[2] *Ibid.* ii. 4, 740, b, 12: ἡ δὲ διάκρισις γίγνεται τῶν μορίων [in the process of evolution] οὐχ ὥς τινες ὑπολαμβάνουσι διὰ τὸ πεφυκέναι φέρεσθαι τὸ ὅμοιον πρὸς τὸ ὅμοιον· [a view which he proceeds to refute] . . . ἀλλ' ὅτι τὸ περίττωμα τὸ τοῦ θήλεος δυνάμει τοιοῦτόν ἐστιν οἷον φύσει τὸ ζῷον, καὶ ἔνεστι δυνάμει τὰ μόρια ἐνεργείᾳ δ' οὐθέν, διὰ ταύτην τὴν αἰτίαν γίνεται ἕκαστον αὐτῶν, καὶ ὅτι τὸ ποιητικὸν καὶ τὸ παθητικὸν ὅταν θίγωσιν, ὃν τρόπον ἐστὶ τὸ μὲν ποιητικὸν τὸ δὲ παθητικόν, . . . εὐθὺς τὸ μὲν ποιεῖ τὸ δὲ πάσχει. ὕλην μὲν οὖν παρέχει τὸ θῆλυ, τὴν δ' ἀρχὴν τῆς κινήσεως τὸ ἄρρεν. The operative force is here the nutritive soul, whose instruments are cold and heat. c. 5, 741, b, 7: the male portion is the

contains the germ and potentiality of the soul.[1] The operative forces which nature uses in this process are heat and cold;[2] but the character of the generative matter and of the germinal life which it contains, determines and regulates these forces.[3] Every germ brings forth a being similar to that from which it sprang, because the blood, the direct source of nutriment to the body, tends to form a body of a certain definite sort, and this tendency continues to operate in the seed. Hence it happens that the character of individuals as well as of races comes to be propagated in the act of

primary source of the evolution, as it is this which contributes the sensitive soul. *ἐνυπαρχόντων δ' ἐν τῇ ὕλῃ δυνάμει τῶν μορίων, ὅταν ἀρχὴ γένηται κινήσεως, ὥσπερ ἐν τοῖς αὐτομάτοις θαύμασι συνείρεται τὸ ἐφεξῆς καὶ ὃ βούλονται λέγειν τινὲς τῶν φυσικῶν, τὸ φέρεσθαι εἰς τὸ ὅμοιον, λεκτέον οὐχ ὡς τόπον μεταβάλλοντα τὰ μόρια κινεῖσθαι, ἀλλὰ μένοντα καὶ ἀλλοιούμενα μαλακότητι καὶ σκληρότητι καὶ χρώμασι καὶ ταῖς ἄλλαις ταῖς τῶν ὁμοιομερῶν διαφοραῖς, γινόμενα ἐνεργείᾳ ἃ ὑπῆρχεν ὄντα δυνάμει πρότερον*, a view which had already been proved in detail in c. 1 (from 733, b, 30, onwards).

[1] See on this, *Gen.* ii. 1, 733, b, 32, 735, a, 4 sqq. c. 3, 736, b, 8 sqq. and p. 6, n. 2, *supra*.

[2] In generation proper these spring from the *φύσις τοῦ γεννῶντος*; in spontaneous generation, from the *κίνησις καὶ θερμότης τῆς ὥρας*; *ibid.* ii. 6, 743, a, 32.

[3] *Ibid.* c. 1, 734, b, 31: *σκληρὰ μὲν οὖν καὶ μαλακὰ* &c. *ἡ θερμότης καὶ ψυχρότης ποιήσειεν ἄν* [*τὰ μόρια*], *τὸν δὲ λόγον, ᾧ ἤδη τὸ μὲν σὰρξ τὸ δ' ὀστοῦν, οὐκέτι, ἀλλ' ἡ κίνησις ἡ ἀπὸ τοῦ γεννήσαντος τοῦ ἐντελεχείᾳ ὄντος ὅ ἐστι δυνάμει ἡ* [read *τὸ*] *ἐξ οὗ γίνεται*, as is further expounded. c. 4, 740, b, 25 (see last note of preceding page). c. 6, 743, a, 3: *ἡ δὲ γένεσίς ἐστιν ἐκ τῶν ὁμοιομερῶν ὑπὸ ψύξεως καὶ θερμότητος.* After explaining how different materials are formed in both ways, he continues, l. 21: *αὕτη δὲ* [heat] *οὔτε ὅ τι ἔτυχε ποιεῖ σάρκα ἢ ὀστοῦν, οὔθ' ὅπῃ ἔτυχεν, ἀλλὰ τὸ πεφυκὸς καὶ ᾗ πέφυκε καὶ ὅτε πέφυκεν. οὔτε γὰρ τὸ δυνάμει ὂν ὑπὸ τοῦ μὴ τὴν ἐνέργειαν ἔχοντος κινητικοῦ ἔσται, οὔτε τὸ τὴν ἐνέργειαν ἔχον ποιήσει ἐκ τοῦ τυχόντος . . . ἡ δὲ θερμότης ἐνυπάρχει ἐν τῷ σπερματικῷ περιττώματι τοσαύτην καὶ τοιαύτην ἔχουσα τὴν κίνησιν καὶ τὴν ἐνέργειαν, ὅση σύμμετρος εἰς ἕκαστον τῶν μορίων . . . ἡ δὲ ψύξις στέρησις θερμότητός ἐστιν. χρῆται δ' ἀμφοτέροις ἡ φύσις ἔχουσι μὲν δύναμιν ἐξ ἀνάγκης ὥστε τὸ μὲν τοδὶ τὸ δὲ τοδὶ ποιεῖν, ἐν μέντοι τοῖς γινομένοις ἕνεκά τινος συμβαίνει τὸ μὲν ψύχειν αὐτῶν τὸ δὲ θερμαί-*

generation.[1] If the male seed, which communicates the impulse of development, has sufficient vigour to mature the substance offered to it, the child follows its father's sex: if it lacks the necessary warmth, a being of colder nature, a woman, is born. For the ultimate distinction between the two sexes is one of greater or less vital heat: the warmer nature can mature the blood to perfect seed, the colder must content itself with supplying the raw material of procreation in the catamenial discharge.[2] Woman is an unfinished man, left standing on a lower step in the scale of development.[3] The gen-

νειν &c.; for all this takes place (l. 16) τῇ μὲν ἐξ ἀνάγκης τῇ δ' οὐκ ἐξ ἀνάγκης ἀλλ' ἕνεκά τινος.

[1] See p. 51, n. 2, *sup.* and p. 58, n. 3, *inf.* *Gen. An.* iv. 1, 766, b, 7: τὸ μὲν σπέρμα ὑπόκειται περίττωμα τροφῆς ὂν τὸ ἔσχατον. ἔσχατον δὲ λέγω τὸ πρὸς ἕκαστον [*i.e.* each part of the body; see p. 45, n. 4, *supra*] φερόμενον. διὸ καὶ ἔοικε τὸ γεννώμενον τῷ γεννήσαντι.

[2] After refuting various views as to the origin of the difference of the sexes, Aristotle proceeds, *Gen. An.* iv. 1, 765, b, 8: ἐπεὶ τὸ ἄρρεν καὶ τὸ θῆλυ διώρισται δυνάμει τινὶ καὶ ἀδυναμίᾳ (τὸ μὲν γὰρ δυνάμενον πέττειν καὶ συνιστάναι τε καὶ ἐκκρίνειν σπέρμα ἔχον τὴν ἀρχὴν τοῦ εἴδους ἄρρεν . . . τὸ δὲ δεχόμενον μὲν ἀδυνατοῦν δὲ συνιστάναι καὶ ἐκκρίνειν θῆλυ [similarly i. 20, 728, a, 18]) ἔτι εἰ πᾶσα πέψις ἐργάζεται θερμῷ, ἀνάγκη καὶ τῶν ζῴων τὰ ἄρρενα τῶν θηλέων θερμότερα εἶναι. [The proof being that the former excrete the prepared seed, the latter in menstruation the raw blood.] . . . ἅμα δ' ἡ φύσις τήν τε δύναμιν ἀποδίδωσιν ἑκάστῳ καὶ τὸ ὄργανον· βέλτιον γὰρ οὕτως, . . . τρίτον δὲ πρὸς τούτοις ληπτέον ὅτι εἴπερ ἡ φθορὰ εἰς τοὐναντίον, καὶ τὸ μὴ κρατούμενον ὑπὸ τοῦ δημιουργοῦντος ἀνάγκη μεταβάλλειν εἰς τοὐναντίον. Hence the true explanation: ὅταν γὰρ μὴ κρατῇ ἡ ἀρχὴ μηδὲ δύνηται πέψαι δι' ἔνδειαν θερμότητος μηδ' ἀγάγῃ εἰς τὸ ἴδιον εἶδος τὸ αὑτοῦ, ἀλλὰ ταύτῃ ἡττηθῇ, ἀνάγκη εἰς τοὐναντίον μεταβάλλειν. . . . ἐπεὶ δ' ἔχει διαφορὰν ἐν τῇ δυνάμει, ἔχει καὶ τὸ ὄργανον διαφέρον· ὥστ' εἰς τοιοῦτον μεταβάλλει. The same account is repeated clearly and precisely, 766, b, 8. Cf. c. 3, 767, b, 10. A number of facts are adduced, c. 2, in support of this theory.

[3] See p. 52, n. 2, *supra*; *Gen. An.* ii. 3, 737, a, 27: τὸ γὰρ θῆλυ ὥσπερ ἄρρεν ἐστὶ πεπηρωμένον. iv. 6, 775, a, 14: ἀσθενέστερα γὰρ ἐστι καὶ ψυχρότερα τὰ θήλεα τὴν φύσιν καὶ δεῖ ὑπολαμβάνειν ὥσπερ ἀναπηρίαν εἶναι τὴν θηλύτητα φυσικήν. i. 20, 728, a, 17: ἔοικε δὲ καὶ τὴν μορφὴν γυνὴ καὶ παῖς, καὶ ἔστιν ἡ γυνὴ ὥσπερ ἄρρεν ἄγονον. v. 3, 784, a, 4. Cf. *Probl.* x. 8. The statement,

erative organs themselves are adapted to their functions; we must not regard them as the causes but as the signs of sexual difference.[1] We should rather look for the ground of sex distinction in the vital principle itself and in the central organ and seat of life: for though it is not complete until the sexual parts appear, yet its germs are laid in the formation of the heart at the very commencement of fœtal existence.[2] On this account sex plays a most various and important part in animal life, influencing to a greater or less extent the temper as well as the physical structure of animals,[3] while castration is followed by vast changes in the nature of men and brutes.[4]

*Longit.* V. 6, 467, a, 32, *νανωδέστερον γὰρ τοῦ θήλεος τὸ ἄρρεν*, the upper portions of his body being relatively greater, does not quite harmonise with this, for it is just the excessive size of those portions that constitutes the dwarfishness of children (*Part. An.* iv. 10, 686, b, 10; *De Mem.* 2, 453, a, 31, b, 6), with whom women are compared.

[1] See last note but one.

[2] *Ibid.* 766, a, 30: *εἰ οὖν τὸ μὲν ἄρρεν ἀρχή τις καὶ αἴτιον, ἔστι δ' ἄρρεν ᾗ δύναταί τι, θῆλυ δὲ ᾗ ἀδυνατεῖ, τῆς δὲ δυνάμεως ὅρος καὶ τῆς ἀδυναμίας τὸ πεπτικὸν εἶναι ἢ μὴ πεπτικὸν τῆς ὑστάτης τροφῆς, ὃ ἐν μὲν τοῖς ἐναίμοις αἷμα καλεῖται ἐν δὲ τοῖς ἄλλοις τὸ ἀνάλογον, τούτου δὲ τὸ αἴτιον ἐν τῇ ἀρχῇ καὶ τῷ μορίῳ τῷ ἔχοντι τὴν τῆς φυσικῆς θερμότητος ἀρχήν, ἀναγκαῖον ἄρα ἐν τοῖς ἐναίμοις συνίστασθαι καρδίαν, καὶ ἢ ἄρρεν ἔσεσθαι ἢ θῆλυ τὸ γινόμενον. ἐν δὲ τοῖς ἄλλοις γένεσιν ὑπάρχει τὸ θῆλυ καὶ τὸ ἄρρεν τὸ τῇ καρδίᾳ ἀνάλογον. ἡ μὲν οὖν ἀρχὴ τοῦ θήλεος καὶ ἄρρενος καὶ ἡ αἰτία αὕτη καὶ ἐν τούτῳ ἐστίν. θῆλυ δ' ἤδη καὶ ἄρρεν ἐστὶν, ὅταν ἔχῃ καὶ τὰ μόρια οἷς διαφέρει τὸ θῆλυ τοῦ ἄρρενος.*

[3] The chief passages on this head are *H. An.* iv. 11, where the peculiarities in the physical structure of each of the sexes in the various animal tribes, and *ibid.* ix. 1, where differences of character are discussed.

[4] A description of which is given, *H. An.* ix. 503. *Gen. An.* iv. 1, 766, a. 28, gives the reason: *ὅτι ἔνια τῶν μορίων ἀρχαί εἰσιν. ἀρχῆς δὲ κινηθείσης πολλὰ ἀνάγκη μεθίστασθαι τῶν ἀκολουθούντων.* According to the passage just referred to, such an effect could not be expected to follow the excision of the testicles, but only of the heart: especially as Aristotle, *Gen. An.* v. 7, 787, b, 26, without knowing their special functions, treats the former as a mere appendage to the seminal ducts. For the account of the

Other phenomena besides the distinction of sex proceed from weakness in the procreative power. The movement communicated by the male seed tends to form a being similar to the parent from whose body was derived the motive force. If, however, the seed is not vigorous enough to overcome the generative substance of the female, a woman is born; or if it cannot succeed in imitating the paternal type, then the child resembles its mother and not its father; again, should the seed fail in both of these attempts, which usually happens, a female child is born with a resemblance to its mother.[1] If the movement is itself deficient in force,[2] the child lacks the personal characteristics which the movement ought to reproduce, and only receives, in descending degrees, the generic properties which the parent had possessed over and above those of his own individuality. Instead of the parental type, that of the family is transmitted, so that the child resembles his grandparents, or still more distant ancestors. So it may happen that nothing but the type of the race is communicated, so that the child, for instance, has a human form without any family characteristics. Lastly, it is possible that the offspring should turn out merely a living creature without even the human attributes, as in the case of children born with bestial forms.[3] If the proper relation between the male and female

matter which he gives in accordance with the latter hypothesis, see *ibid.* 788, a, 3 sqq.

[1] *Gen. An.* iv. 3, 767, b, 15 sqq., 768, a, 2 sqq. 21 sqq.

[2] Aristotle expressly distinguishes, *ibid.* 768, a, 14, 31, ἐὰν λυθῶσιν αἱ κινήσεις, from the other case, ἐὰν μὴ κρατήσῃ ἡ κίνησις [τοῦ ἀνδρός].

[3] *Ibid.* iv. 3; cf. esp. 767, b, 24, 768, b, 15, 769, b, 2 sqq.

is altogether wanting, then no conception at all follows.[1]

Among the phenomena of life which are common to all animals we may next mention Sensation, the most important point of difference between animals and vegetables.[2] Sensation is a change produced in the percipient by the object perceived,[3] a movement communicated to the soul through the medium of the body.[4]

[1] *Ibid.* c. 2, 767, a, 13 sqq. A number of other passages relating to the distinction of the sexes and to procreation, we must be content briefly to indicate. The sexual parts of different animals are discussed *Gen. An.* i. 2–16, ii. 6; *Hist. An.* iii. 1, cf. AUBERT-WIMMER, pp. 3 sq. of their edition of *De Gen. An.*; puberty, menstruation, and lactation, *Gen.* iv. 8, ii. 4, 738, a, 9 sqq.; the causes of fruitfulness and unfruitfulness, *Gen.* ii. 7, 746, a, 29–c. 8 *fin.*; πολυτοκία, ὀλιγοτοκία and μονοτοκία, certain kinds of abortion, the perfect and imperfect formation of children, superfœtation and the like, *Gen.* iv. 4–7; the formation of the bodies of animals and the order of the development of their parts, *Hist.* viii. 7 sq.; *Gen.* ii. 1, 734, a, 16–33, 735, a, 12 sq. c. 4, 739, b, 20–740, b, 25, c. 5, 741, b, 15 sqq. c. 6 (743, b, 20 compares nature to an artist, who first sketches the outline of his picture and then lays on the colours); the nourishment of the embryo through the navel, *Gen.* ii. 7, *Hist.* viii. 8; the production and development of birds, *Gen.* iii. 1 sq. 6; of fishes, iii. 3–5, 7; of mollusca and testacea, *ibid.* iii. 8; of insects, especially bees (with regard to which Aristotle holds that the queens and female workers are born of queens, drones of working bees, and that there is no marriage among them), *ibid.* iii. 9, 10, *Hist.* v. 19 (cf LEWES, *Arist.* § 188 sqq.); spontaneous generation, *ibid.* iii. 11, i. 23 *fin.*, *Hist.* v. 15 sq. c. 19, 551, a sq. c. 11, 543, b, 17, vi. 15, 569, a, 10 sqq.; the nature of the birth and the time of pregnancy, *ibid.* iv. 9.—The differences which separate the various grades of animal creation in respect of their origin and method of propagation will call for further discussion below, and the origin and gradual evolution of the soul will be the subject of the next chapter.

[2] See pp. 27 and 37, *supra*; and with the following account cf. BÄUMKER, *Des Arist. Lehre von den Sinnesvermögen* (Leipsic, 1877).

[3] *De An.* ii. 5 *init.*

[4] κίνησίς τις διὰ τοῦ σώματος τῆς ψυχῆς. *De Somno*, 1, 454, a, 9. How far we may speak of a 'movement of the soul' at all is the subject of subsequent discussion.

The nature of this process may be explained and estimated by the abstract laws of action and passivity.[1] It is the object of perception which sets the change in motion, the percipient which undergoes the change. The former is active, the latter passive. Hence the latter is related to the former in the same way as the actual to the possible or as form to matter. The perception for which a subject is fitted by its nature is developed into actuality by the object perceived; the form of the object is impressed upon the percipient.[2] This relation, however, is further conditioned by the nature of the percipient Like thought, perception can only legitimately be called a *passive* affection, if the phrase is taken to include the progress from mere capacity to actuality.[3]

[1] See the passages quoted vol. i. 454 sqq., to which express allusion is made *De An.* ii. 5, 417, a, 1.

[2] *De An.* ii. 5, 417, a, 9 to the end of the chapter, where the preceding discussion is summed up in the words: τὸ δ' αἰσθητικὸν δυνάμει ἐστὶν οἷον τὸ αἰσθητὸν ἤδη ἐντελεχείᾳ, καθάπερ εἴρηται· πάσχει μὲν οὖν οὐχ ὅμοιον ὄν, πεπονθὸς δ' ὡμοίωται καὶ ἔστιν οἷον ἐκεῖνο, iii. 2, 425, b, 25: ἡ δὲ τοῦ αἰσθητοῦ ἐνέργεια καὶ τῆς αἰσθήσεως ἡ αὐτὴ μέν ἐστι καὶ μία, τὸ δ' εἶναι οὐ ταὐτὸν αὐταῖν· λέγω δ' οἷον ψόφος ὁ κατ' ἐνέργειαν καὶ ἀκοὴ ἡ κατ' ἐνέργειαν . . . ὅταν δ' ἐνεργῇ τὸ δυνάμενον ἀκούειν καὶ ψοφῇ τὸ δυνάμενον ψοφεῖν, τότε ἡ κατ' ἐνέργειαν ἀκοὴ ἅμα γίνεται καὶ ὁ κατ' ἐνέργειαν ψόφος. And as operations and motions take effect upon passive subjects, this particular operation takes place upon the percipient. Cf. *infra*, p. 60, n. 3, p. 61, n. 4; and see *Part. An.* ii. 1, 647, a, 5 sqq.

[3] *De An.* ii. 5, 417, b, 2: οὐκ ἔστι δ' ἁπλοῦν οὐδὲ τὸ πάσχειν, ἀλλὰ τὸ μὲν φθορά τις ὑπὸ τοῦ ἐναντίου, τὸ δὲ σωτηρία μᾶλλον τοῦ δυνάμει ὄντος ὑπὸ τοῦ ἐντελεχείᾳ ὄντος καὶ ὁμοίου οὕτως ὡς δύναμις πρὸς ἐντελέχειαν. Thus in the case of learning, we must either refrain altogether from saying that the learner is the subject of an operation or we must distinguish between two kinds of πάσχειν—τήν τε ἐπὶ τὰς στερητικὰς διαθέσεις μεταβολὴν καὶ τὴν ἐπὶ τὰς ἕξεις καὶ τὴν φύσιν (cf. i. p. 197). Similarly with perception: so soon as the percipient comes into the world, ἔχει ἤδη ὥσπερ ἐπιστήμην καὶ τὸ αἰσθάνεσθαι. καὶ τὸ κατ' ἐνέργειαν δὲ ὁμοίως λέγεται τῷ θεωρεῖν (as the latter is the actual application of a faculty which is already possessed, so perception is the activity of a faculty which already exists in the percipient); διαφέρει δὲ [sc. τὸ αἰσθάνεσθαι τοῦ θεωρεῖν], ὅτι τοῦ μὲν τὰ ποιητικὰ

Perception, therefore, may be equally described as an act, or more accurately as the joint act of percipient and perceived,[1] which act, however, has its seat in the former.[2] Further, the perceived object can be said to stand to the percipient in the relation of actuality to possibility only in so far as the one is capable of being perceived and the other of perceiving. It is not the *matter* of an object which acts upon the sense in question, but only *those properties* of an object which the particular sense is designed to perceive. Hence it follows that it is the sensible form of objects without the matter that is received in the act of sensation. The material object itself is not communicated to the percipient, but only its operation.[3] This apprehension of the

*τῆς ἐνεργείας ἔξωθεν, τὸ ὁρατὸν καὶ τὸ ἀκουστόν* &c. iii. 7, 431, a, 4: *φαίνεται δὲ τὸ μὲν αἰσθητὸν ἐκ δυνάμει ὄντος τοῦ αἰσθητικοῦ ἐνεργείᾳ ποιοῦν·* [The perceived object makes that which is capable of perception and which is only a *δυνάμει ὂν* into an *ἐνεργείᾳ ὄν*.] *οὐ γὰρ πάσχει οὐδ' ἀλλοιοῦται. διὸ ἄλλο εἶδος τοῦτο κινήσεως* [something different from *κίνησις*]. *ἡ γὰρ κίνησις τοῦ ἀτελοῦς ἐνέργεια ἦν, ἡ δ' ἁπλῶς ἐνέργεια ἑτέρα ἡ τοῦ τετελεσμένου* (such also, however, is the *αἰσθητικὸν* according to ii. 5, 417, b, 29 sqq.).

[1] *De An.* iii. 2, 426, a, 15: *ἐπεὶ δὲ μία μέν ἐστιν ἡ ἐνέργεια ἡ τοῦ αἰσθητοῦ καὶ ἡ τοῦ αἰσθητικοῦ, τὸ δ' εἶναι ἕτερον* &c. Cf. foll. n. There is here no question of any reciprocal operation of the sensible object and the sensitive organ (PRANTL, *Arist. v. d. Farben*, 144, whom KAMPE criticises, *Erk.-Theorie d. Arist.* 80, 4), for the object is not subject to any operation, but there is a joint operation, the result of which is perception. That this act gives a true account of the objects perceived, has already been said, in vol. i. pp. 208 sqq.

[2] *De An.* ii. 2, 456, a, 5: *εἰ δή ἐστιν ἡ κίνησις καὶ ἡ ποίησις καὶ τὸ πάθος ἐν τῷ ποιουμένῳ, ἀνάγκη καὶ τὸν ψόφον καὶ τὴν ἀκοὴν τὴν κατ' ἐνέργειαν ἐν τῇ κατὰ δύναμιν εἶναι . . . ἡ μὲν οὖν τοῦ ψοφητικοῦ ἐνέργειά ἐστι ψόφος ἢ ψόφησις, ἡ δὲ τοῦ ἀκουστικοῦ ἀκοὴ ἢ ἄκουσις.* Similarly with all the other senses: *ἡ τοῦ αἰσθητοῦ ἐνέργεια καὶ ἡ τοῦ αἰσθητικοῦ ἐν τῷ αἰσθητικῷ.*

[3] *De An.* ii. 12 *init.*: *ἡ μὲν αἴσθησίς ἐστι τὸ δεκτικὸν τῶν αἰσθητῶν εἰδῶν ἄνευ τῆς ὕλης, οἷον ὁ κηρὸς τοῦ δακτυλίου ἄνευ τοῦ σιδήρου καὶ τοῦ χρυσοῦ δέχεται τὸ σημεῖον, λαμβάνει δὲ τὸ χρυσοῦν ἢ τὸ*

form without the matter is only possible where there is in the soul a point of unity, a centre in which the sensible impressions can reflect themselves; and on this account perception first appears in the animal kingdom.[1] Moreover, since the faculty of perception is the force and form of the physical organ, it presupposes a certain harmony in its component parts; and if this harmony is disturbed by too vehement an impression on the sense, then the faculty of perception is lost.[2] The seat of this faculty is invariably a homogeneous body[3] which must contain potentially both of the opposite qualities that may be communicated to it by the objects of sense; but just for this reason it must itself stand midway between them.[4] The operation of the object upon

χαλκοῦν σημεῖον, ἀλλ' οὐχ ᾗ χρυσὸς ἢ χαλκὸς, ὁμοίως δὲ καὶ ἡ αἴσθησις ἑκάστου ὑπὸ τοῦ ἔχοντος χρῶμα ἢ χυμὸν ἢ ψόφον πάσχει, ἀλλ' οὐχ ᾗ ἕκαστον ἐκείνων λέγεται, ἀλλ' ᾗ τοιονδὶ καὶ κατὰ τὸν λόγον. (There is no trace, however, in this passage of what VOLKMANN, *Grundz. d. Arist. Psychol.* [*Abhandl. d. böhm. Gesellsch.* x. 126 sq. *Psychol.* i. 218] finds in it, viz. that 'sense is not affected by sounds &c. in so far as each of these is what it is, but in so far as the sense is what it is.') Cf. foll. n. and *De An.* iii. 2, 425, b, 23: τὸ γὰρ αἰσθητήριον δεκτικὸν τοῦ αἰσθητοῦ ἄνευ τῆς ὕλης ἕκαστον. Whence it follows that all perception is of a universal, a τοιόνδε; see i. 207, n. 1, *supra*.

[1] *De An.* ii. 12, 424, a 32: plants have no αἴσθησις, although they are not without souls; αἴτιον γὰρ τὸ μὴ ἔχειν μεσότητα, μηδὲ τοιαύτην ἀρχὴν οἵαν τὰ εἴδη δέχεσθαι τῶν αἰσθητῶν, ἀλλὰ πάσχειν μετὰ τῆς ὕλης. iii. 12, 434, a, 29: those ζῶντα are without αἴσθησις, ὅσα μὴ δεκτικὰ τῶν εἰδῶν ἄνευ τῆς ὕλης. Cf. also *supra*, pp. 33 sqq. and notes, as well as the remarks *infra*, upon the *sensus communis*.

[2] *De An.* ii. 12, 424, a, 26: the αἰσθανόμενον is a body (μέγεθος); αἴσθησις, on the other hand, is not μέγεθος, ἀλλὰ λόγος τις καὶ δύναμις ἐκείνου [τοῦ αἰσθανομένου]. φανερὸν δ' ἐκ τούτων καὶ διὰ τί ποτε τῶν αἰσθητῶν αἱ ὑπερβολαὶ φθείρουσι τὰ αἰσθητήρια· ἐὰν γὰρ ᾖ ἰσχυροτέρα τοῦ αἰσθητηρίου ἡ κίνησις, λύεται ὁ λόγος, τοῦτο δ' ἦν ἡ αἴσθησις, ὥσπερ καὶ ἡ συμφωνία καὶ ὁ τόνος κρουομένων σφόδρα τῶν χορδῶν. Cf. iii. 13, 435, b, 15.

[3] *Part. An.* ii. 1, 647, a, 2 sqq., where αἰσθητήρια in this sense are distinguished from the ὀργανικὰ μέρη (face, hands, &c.).

[4] Aristotle remarks this spe-

the senses depends upon a medium which transmits it from the one to the other. Flesh is the medium of the sense of touch, air and water of the other senses;[1] and to this medium the materials of which the organs of sense consist correspond. The connection, however, of the five senses with the four elements[2] is only tentatively adopted by Aristotle.[3] The higher tribes of animals

cially of touch, *De An.* ii. 11, 423, b, 29 sqq. This sense, he says, perceives the opposite qualities of bodies; τὸ δὲ αἰσθητήριον αὐτῶν τὸ ἁπτικὸν . . . τὸ δυνάμει τοιοῦτόν ἐστι μόριον. Since perception is a πάσχειν by which the δυνάμει ὂν is made by the operative principle into something like that which itself is ἐνεργείᾳ (cf. *supra*, p. 59, n. 2), διὸ τοῦ ὁμοίως [sc. ὡς τὸ αἰσθητήριον] θερμοῦ καὶ ψυχροῦ ἢ σκληροῦ καὶ μαλακοῦ οὐκ αἰσθανόμεθα, ἀλλὰ τῶν ὑπερβολῶν, ὡς τῆς αἰσθήσεως οἷον μεσότητός τινος οὔσης τῆς ἐν τοῖς αἰσθητοῖς ἐναντιώσεως. καὶ διὰ τοῦτο κρίνει τὰ αἰσθητά. τὸ γὰρ μέσον κριτικόν: just as the eye in order that it may be able to perceive black and white must be neither of these actually but both potentially, so it is with the sense of touch.

[1] *Ibid.* ii. 7, 419, a, 7–35. According to this passage, the medium of the perceptions of sight is light, of hearing air, of smell moisture: περὶ δὲ ἁφῆς καὶ γεύσεως ἔχει μὲν ὁμοίως οὐ φαίνεται δέ. Their medium (see *supra*, p. 39, n. 4) is flesh. For further details, see *infra*, and in i. 518, n. 3, *supra*

[2] Aristotle remarks himself (*Part. An.* ii. 1, 647, a, 12; *De Sensu*, c. 2, 437, a, 19 sqq.) that several of his predecessors attempted to establish this connection, but he does not say to whom he refers. The citations on the views of Empedocles and Democritus (ZELLER, *Ph. d. Gr.* i. 723, 817, 3) and from Plato (*ibid.* ii. a, 727, 3) on this head are not sufficient to explain the statement (in the above passage *De Sensu*) that one of the four elements was assigned to each of the senses, but that this only raised the difficulty of the discrepancy in their respective numbers.

[3] See the two passages, *De An.* iii. 1 and *De Sensu*, 2, 438, b, 16 sqq. In the former of these Aristotle desires to show that there cannot be more than the five senses (the opposite had been asserted by Democritus: see ZELL. *Ph.d.Gr.* i. 817, 5), which he proves in this way: the properties of things are perceived either immediately or by means of a medium. The former is the case with the perception of touch (only in the sense, however, that the medium is in the percipient itself: see n. 1, *supra*, and cf. *De An.* ii. 11, 423, b, 12). In the latter case the sensitive organ for each class of perceptions must consist of an elementary material of the same kind as that through the medium of which the perceptions reach the

possess all the five senses; the lower are without one or other. It is only the sense of touch, and its de-

senses. Properly speaking, however, we have only water and air to deal with, as fire operates as vital heat in all the senses, and earth peculiarly (ἰδίως) either in none or in touch (of which taste, according to Aristotle, is a subordinate variety: see p. 22, n. 1, *supra*). Even flesh, however, the organ of the latter sense, does not consist merely of earth, but of a mixture of earth and water and air. Although it is, therefore, the most material of all the organs of sense, it yet stands in the middle between the different kinds of tangible things, and is sensitive to them all. (*De An.* ii. 11, 423, a, 11 sqq. iii. 13, 435, a, 11-b, 2; *Part. An.* ii. 1, 647, a, 19, c. 8, 653, b, 29.) The pupil of the eye is of water; sounds are perceived by air in the passages of the ear; the sense of smell resides in both air and water. The perception of universal properties of things, however, such as form, size, motion, &c., cannot be confined to the organs of any particular sense, being in its nature common to all (cf. *infra*, pp.66 sqq.).—In the second of the above passages it is said: ὥστ' εἴπερ τούτων τι συμβαίνει, καθάπερ λέγομεν, φανερὸν ὡς δεῖ τοῦτον τὸν τρόπον ἀποδιδόναι καὶ προσάπτειν ἕκαστον τῶν αἰσθητηρίων ἑνὶ τῶν στοιχείων. τοῦ μὲν ὄμματος τὸ ὁρατικὸν ὕδατος ὑποληπτέον, ἀέρος δὲ τὸ τῶν ψόφων αἰσθητικὸν, πυρὸς δὲ τὴν ὄσφρησιν. ὃ γὰρ ἐνεργείᾳ ἡ ὄσφρησις τοῦτο δυνάμει τὸ ὀσφραντικόν . . . ἡ δ' ὀσμὴ καπνώδης τίς ἐστιν ἀναθυμίασις, ἡ δ' ἀναθυμίασις ἡ καπνώδης ἐκ πυρός . . . τὸ δ' ἁπτικὸν γῆς. τὸ δὲ γευστικὸν εἶδός τι ἁφῆς ἐστίν. It is impossible (as ALEX. *in loco*, p. 80 sq. pointed out) to suppose that Aristotle here intends to assign the organs of the various senses to the four elements respectively. He here repeats what he says in the *De An.* of the organ of smell when he remarks that it is merely δυνάμει what ὄσφρησις is ἐνεργείᾳ, δυνάμει γὰρ θερμὴ ἡ τοῦ ψυχροῦ ὕλη ἐστὶν, and that, like the eye, it is closely connected with the brain, the coldest and dampest part of the body; but smell itself is assigned to fire, because it is produced by the heating of the cold olfactory organ by the ὀσμὴ καπνώδης, which is of a fiery nature. (So also c. 5, 444, a, 8–22, where Aristotle explains on this ground the æsthetic pleasure in smells peculiar to man; see last note on next page.) But according to Bekker's text, the words φανερὸν ὡς δεῖ &c. would give the meaning just referred to as inadmissible. It is all the more welcome to find that, as BÄUMKER, p. 47 sq. reminds us, four of the seven MSS. in *De Sensu*, 438, b, 17, give εἰ before δεῖ, so that we may read: φανερὸν ὡς εἰ δεῖ . . . τῶν στοιχείων, τοῦ μὲν ὄμματος &c. In this view, Aristotle offers the explanation that follows only hypothetically, and from a point of view different from his own. This view of the passage corresponds precisely with that of ALEX. *ibid.*, who seems, therefore, also to have read εἰ before δεῖ; cf. p. 78:

pendent sense of taste, which is quite indispensable.[1] Of touch Aristotle says that it is as impossible for an animal to be without it as for any other creature but an animal to possess it. It is, in fact, the most universally important sign of life; and therefore any excessive impression made upon this sense would not, as in the case of the others, destroy a single organ alone, but the life itself of the animal.[2] These two senses are thus the commonest and lowest; they serve the baser needs of life:[3] while sight and hearing, as the means of rational development, occupy the highest rank. Hearing, however, deserves the preference, since we owe to this sense the possibility of oral instruction.[4] Of all living creatures man is furnished with the subtlest taste and subtlest feeling; many animals exhibit the other senses in a greater state of acuteness,[5] but in the case of man they play a special part in his spiritual culture.[6]

*εἰ οὕτω, φησὶν, ἐπὶ τῆς ὄψεως ἔχει καὶ διὰ τοῦτο, καθὰ ἐγλίχοντό τινες, ἕκαστον αἰσθητήριον ἑκάστῳ τῶν στοιχείων ἀνατίθεται* &c.; p. 80: *οὐ γὰρ δὴ ἀρέσκοντα αὐτῷ λέγει* &c.; cf. also *Part. An.* ii. 1, 647, a, 12.

[1] On this point cf. the not wholly consistent statements, *Hist. An.* iv. 8; *De An.* ii. 3, 415, a, 3 sqq. iii. 12, 434, b, 11–29, c. 13, 435, b, 17 sqq.; *De Sensu*, 1, 436, b, 12 sqq.; *De Somno*, 2, 455, a, 5; *Metaph.* i. 1, 980, b, 23; MEYER, *Arist. Thierk.* 432 sq., and p. 22, n. 1, *supra*.

[2] *De An.* iii. 12, 13, 434, b, 22, 435, b, 4–19.

[3] Feeling is indispensable to every animal for the preservation of life, the other senses, on the other hand, are so *οὐ τοῦ εἶναι ἕνεκα, ἀλλὰ τοῦ εὖ*. *De An.* iii. 13, 435, b, 19; cf. c. 12, 434, b, 22 sqq.

[4] *De Sensu*, 1, 436, b. 12 to end of chap.; *Metaph. ibid.*

[5] *De An.* ii. 9, 421, a, 9–26; *De Sensu*, 4, 440, b, 30 sqq.; *Part. An.* ii. 16 sq., 660, a, 11, 20; *Gen. An.* ii. 2, 781, b, 17.

[6] *De An. ibid.*: man's higher intelligence is explained on the ground of his finer feeling; but it is certain that Aristotle regarded the human eye and ear as also of higher significance for the development of the spiritual life than those of the lower animals; *Eth.* iii. 13, 1118, a, 16 sqq., he remarks of smell, hearing, and sight,

Coming to the particular senses, Aristotle observes that the seat of sight is in the pupil of the eye. Formed of water, this organ is affected by colours which are communicated to it through a transparent medium.[1] Sounds acting on our ears through the medium of air are transmitted to the sense by the air in the auditory passages.[2] Smells are conveyed to the olfactory organ by air and water: they are inhaled with the air by respiring animals; to non-respiring animals water is the medium of smell.[3] The primary qualities of matter which belong to all bodies and their particular modifica-

*De Sensu*, 5, 443, b, 15–444, a, 9, *ibid.* l. 28 sqq., of smell, that man alone takes delight in these sensations for their own sake and not merely for the sake of food (albeit smell is his lowest sense: *De Sensu*, 4, 440, b, 31; *De An.* ii. 9, 421, a, 9); of the senses generally Aristotle says, *Gen. An. ibid.*: τὴν μὲν οὖν πόρρωθεν ἀκρίβειαν τῶν αἰσθήσεων ἥκιστα ὡς εἰπεῖν ἄνθρωπος ἔχει ὡς κατὰ μέγεθος τῶν ζῴων, τὴν δὲ περὶ τὰς διαφορὰς μάλιστα πάντων εὐαίσθητον, his organs of sense being the purest, and the least earthy and material, and his skin being the finest. MEYER, *ibid.* 435 sq., brings together his statements with regard to the sensitive organs of the various animals.

[1] See p. 64, *supra*; *De Sensu*, 2, 438, a, 12 sqq. b, 5; *Hist. An.* i. 8, 491, b, 20; *Part. An.* ii. 8, 653, b, 25, c. 10, 686, a, 37 sq.; *Gen. An.* ii. 6, 744, a, 5, and elsewhere; cf. BÄUMKER, 48 sq., and i 518, n. 3, *supra*. That the eyes also operate upon the objects (and that not merely by reflecting the light) is proved, *De Insomn.* 2, 459, b, 23 sqq., by a fictitious experience.

[2] *Part. An.* ii. 10, 656, b, 13 sqq.; *De An.* ii. 8, 420, a, 2 sqq.; cf. p. 478; BÄUMKER, 52. It is not quite clear how Aristotle conceives of the connection of this air with the central organ of sense; he merely remarks, *Part. An. ibid.*, that the ears are united with the occiput (which, according to his opinion, i. 262, n. 1, *supra*, is empty) by means of passages.

[3] *De An.* ii. 9, 421, b, 8 sqq. iii. 1 (see p. 6, *supra*); *De Sensu*, 5, 442, b, 27 sq. 444, a, 8 sqq.; cf. p. 537, 3, 539, 6, 478, *med.*; BÄUMKER, 53 sq. It has been already remarked, p. 62, n. 3, *supra*, that the sense of smell also is connected with the brain, but there is nothing said about any connection between it and the heart. Aristotle shows, *De Sensu*, 5, 455, a, 4 sqq., that smell occupies a middle position between the αἰσθήσεις ἁπτικαὶ and δι' ἄλλου αἰσθητικαί.

tions are the proper objects of the sense of touch.[1] The organ of touch is the heart: the medium through which impressions are transmitted to the heart is the flesh;[2] and the same may be said of taste, which is nothing but a species of touch,[3] the only difference being that the tongue is its sole conductor.[4] How the sensations communicated by particular senses can have their seat in the head,[5] while the seat of the sensitive life itself is in the heart,[6] and all sensation belongs to one and the same part of the soul,[7] Aristotle fails to ex-

[1] *De An.* ii. 11, 423, b, 26: ἁπταὶ μὲν οὖν εἰσιν αἱ διαφοραὶ τοῦ σώματος ᾗ σῶμα· λέγω δὲ τὰς διαφορὰς αἳ τὰ στοιχεῖα διορίζουσι, θερμὸν ψυχρὸν, ξηρὸν ὑγρόν. Besides these fundamental qualities the sense of touch perceives also hardness and softness and others, and Aristotle asks accordingly, 422, b, 19, whether it is only one sense or several. He rejects the latter supposition, however, l. 27 sqq., with the remark that the other senses also perceive more than one ἐναντίοτης: by hearing, for example, besides height and depth we perceive loudness of sound, softness and roughness in the voice, &c. Therefore BRENTANO'S assertion (*Psychol. d. Ar.* 85) that it is erroneous according to Aristotle to regard feeling as only a single sensitive faculty, is not accurate.

[2] See p. 39, n. 4, p. 62 n. 3, *sup.*; *De An.* ii. 11, 422, b, 20, 35 sqq. 423, b, 1 sqq 22; *Part. An.* ii. 10, 656, b, 35; *De Vita*, 3, 469, a, 5–20; BÄUMKER, 54 sqq.

[3] See p. 22, n. 1, *supra*, and on the sources of taste, i. 518 sq.

[4] *De An.* ii. 11, 423, a, 17 sqq. c. 10, 422, a, 34.

[5] BÄUMKER, 78 sqq., shows as against SCHELL (*Die Einheit des Seelenl. nach Ar.* 163 sqq.) from *De An.* ii. 1, 412, b, 18, 413, a, 2, ii. 11, 423, b, 17 sqq. iii. 2, 426, b, 8; *Part. An.* ii. 1, 647, a, 2 sqq. c. 8, 653, b, 24 sqq., and other passages, that Aristotle assumes this to be the case in respect to the above three senses. Cf. *De Sensu*, c. 2 (p. 62, n. 3, *supra*).

[6] *Vide* p. 41 sq. The view that the brain is the seat of sensation (ALCMÆON, see ZELL. *Ph.d.Gr.* i. 456, 1; PLATO, *Tim.* 67, B, 76, D), is expressly refuted by Aristotle: *Part. An.* ii, 10, 656, a, 15 sqq. b, 11, c. 7, 652, b, 2; *De Juvent.* 3, 469, a, 20. He holds himself that the brain is devoid of feeling, resting his view upon supposed experiences, upon which see MEYER, *Arist. Thierk.* 431.

[7] *De An.* iii. 1, 425, a, 31, and more fully *De Sensu*, 7, 449, a, 5 sqq., where *inter alia*: ἀνάγκη ἄρα ἕν τι εἶναι τῆς ψυχῆς, ᾧ ἅπαντα αἰσθάνεται, . . ἄλλο δὲ γένος δι' ἄλλου. Just as one and the same thing has different properties, so θετέον καὶ ἐπὶ τῆς ψυχῆς τὸ αὐτὸ καὶ ἓν εἶναι ἀριθμῷ τὸ αἰσθητικὸν

plain.[1] If his view is that the pictorial image is generated in the organs of sense, while its reference to the object takes place in the heart,[2] the question still remains, how can sensation originate in organs in which the sensitive soul does not reside?

πάντων, τὸ μέντοι εἶναι ἕτερον καὶ ἕτερον τῶν μὲν γένει τῶν δὲ εἴδει. ὥστε καὶ αἰσθάνοιτ' ἂν ἅμα τῷ αὐτῷ καὶ ἑνὶ, λόγῳ δ' οὐ τῷ αὐτῷ. *De Somno*, 2, 455, a, 20: ἔστι μὲν γὰρ μία αἴσθησις καὶ τὸ κύριον αἰσθητήριον ἓν τὸ δ' εἶναι αἰσθήσει τοῦ γένους ἑκάστου ἕτερον (its character is different in each kind of sensation).

[1] Neither from *Part. An.* iii. 4, 666, a, 16, ii. 10, 656, b, 3; cf. *Hist. An.* i. 4, 489, a, 23; *De Somno*, 2, 455, b, 6, nor from the passage in c. 3 of the π. ἐνυπνίων, which seems to give the greatest support to this view, are we justified in saying with certainty that Aristotle regards the blood as the conductor by which the sensitive movements are led to the heart. He certainly assumes that a portion of the blood flows at intervals back to the heart, carrying its own natural motions with it (*ibid.* 461, b, 11). From this, however, he merely concludes (as will be shown, p. 71, n. 3, *infra*) that the movements caused by previous perceptions and latent in the organs of sense, being no longer overpowered by movements in the blood, are liberated and carried in like manner to the heart; it appears, therefore, that he regards them as different from those in the blood.

[2] This is the view put forward in the passage just referred to in the treatise upon Dreams, where 461, a, 30 goes on to say: τῷ μὲν γὰρ ἐκεῖθεν [sc. ἀπὸ τῶν αἰσθητηρίων] ἀφικνεῖσθαι τὴν κίνησιν πρὸς τὴν ἀρχὴν καὶ ἐγρηγορὼς δοκεῖ ὁρᾶν καὶ ἀκούειν καὶ αἰσθάνεσθαι, καὶ διὰ τὸ τὴν ὄψιν ἐνίοτε κινεῖσθαι δοκεῖν οὐ κινουμένην ὁρᾶν φαμὲν, καὶ τῷ τὴν ἁφὴν δύο κινήσεις εἰσαγγέλλειν τὸ ἓν δύο δοκεῖν. The words refer, as the repetition of δοκεῖν shows, to the cases of self-deception discussed c. 2, 460, b, 3 sqq. 11, 20, 22 sqq. c. 3, 461, b, 30. These Aristotle explains on the ground that the judgment upon the object and the pictorial image are due to the exercise of different faculties (*ibid.* 460, b, 16: αἴτιον δὲ τοῦ συμβαίνειν ταῦτα τὸ μὴ κατὰ τὴν αὐτὴν δύναμιν κρίνειν τό τε κύριον [subj.] καὶ ᾧ τὰ φαντάσματα γίνεται). ὅλως γὰρ [as c. 3, 461, b, proceeds] τὸ ἀφ' ἑκάστης αἰσθήσεώς φησιν ἡ ἀρχὴ, ἐὰν μὴ ἑτέρα κυριωτέρα ἀντιφῇ. φαίνεται μὲν οὖν πάντως, δοκεῖ δ' οὐ πάντως τὸ φαινόμενον [the sun, for example, appears to us to be a foot broad, nevertheless we refuse to believe it; c. 2, 460, b, 18], ἀλλ' ἐὰν [but only when] τὸ ἐπικρῖνον κατέχηται ἢ μὴ κινῆται τὴν οἰκείαν κίνησιν. It is this κύριον καὶ ἐπικρῖνον (461, b, 24 sq.) which refers the sense-perception to its object. It, for instance, when sensation presents us with the image of a particular man, identifies it with the man in question. In sleep, on the other hand, when

The separate senses, however, are insufficient of themselves to explain the fact of sense-perception. The universal qualities of things—such as time, motion and rest, unity and multiplicity, size and form—are not, like sound and colour, the peculiar objects of special senses ;[1] they are perceived by all the senses, and only indirectly by each. The faculty, therefore, by which they are perceived must be distinct from all the particular senses: it must be a *sensus communis* or 'common sense.'[2] This sense, moreover, enables us to compare and distinguish the perceptions of different senses.[3] When,

consciousness is imprisoned, the image is taken for the object itself. The seat of this faculty cannot be other than a single κύριον αἰσθητήριον (*De Somno*, 2, 455, a, 21), of which sleep and waking are particular states (see p. 75, *infra*).

[1] *De An.* ii. 7, Aristotle distinguishes between καθ' αὑτὰ [not merely κατὰ συμβεβηκὸς] αἰσθητὰ between ἴδια and κοινὰ, remarking 418, a, 11: λέγω δ' ἴδιον μὲν ὃ μὴ ἐνδέχεται ἑτέρᾳ αἰσθήσει αἰσθάνεσθαι . . . κοινὰ δὲ κίνησις, ἠρεμία, ἀριθμὸς, σχῆμα, μέγεθος. Similarly, iii. 1, 425, a, 13: ἀλλὰ μὴν οὐδὲ τῶν κοινῶν οἷόν τ' εἶναι αἰσθητήριόν τι ἴδιον, ὧν καὶ ἑκάστῃ αἰσθήσει αἰσθανόμεθα κατὰ συμβεβηκὸς [TORSTRIK's proposal to read οὐ κ. σ. is rightly rejected by BRENTANO, *Psychol. d. Ar.* 98], οἷον κινήσεως, στάσεως, σχήματος, μεγέθους, ἀριθμοῦ, ἑνός. *De Mem.* 450, a, 9. On time see p. 73, n. 4, *infra*.

[2] We are informed of motion &c through the separate senses κατὰ συμβεβηκὸς (*De An.* iii. 1; *v.* preceding note). These qualities are accompaniments of particular sense-perceptions, and the multiplicity of the senses even assists us in distinguishing them from the latter (ὅπως ἧττον λανθάνῃ τὰ ἀκολουθοῦντα καὶ κοινά, *ibid.* 425, b, 5). Were we therefore confined for our perception of them to the particular senses, we should know them only as accessory (*e.g.* if we saw a white object, which moved, we should perceive only its colour and not its motion). τῶν δὲ κοινῶν ἤδη ἔχομεν αἴσθησιν κοινὴν οὐ κατὰ συμβεβηκός· οὐκ ἄρ' ἐστιν ἰδία (*ibid.* 425, a, 24 sqq.). *De Mem. ibid.* says that size and motion are known to us by the same faculty as time, καὶ τὸ φάντασμα [sc. αὐτῆς] τῆς κοινῆς αἰσθήσεως πάθος ἐστίν. Cf. i. 435, n. 2, *supra*.

[3] *De An.* iii. 2, 426, b, 8: each sense perceives τὰς τοῦ ὑποκειμένου αἰσθητοῦ διαφοράς, *e.g.* sight, those of colour. ἐπεὶ δὲ καὶ τὸ λευκὸν καὶ τὸ γλυκὺ καὶ ἕκαστον τῶν αἰσθητῶν πρὸς ἕκαστον κρίνομεν, τίνι αἰσθανόμεθα ὅτι διαφέρει ; ἀνάγκη δὴ αἰσθήσει· αἰσθητὰ γάρ ἐστιν . . . οὔτε δὴ κεχωρισμένοις ἐνδέχεται κρίνειν ὅτι ἕτερον τὸ

further, we declare the phenomena presented to us by the senses at one time to be objectively real, at another to be unreal, it cannot be our senses themselves that pronounce this judgment, for their presentations are in both cases alike; nor if we are deceived in our judgment, are the senses to blame for the mistake, seeing that they always report correctly.[1] The common principle of all sense-perception is alone responsible for the reference of the perception to the object, and therefore for the mistakes that are made.[2] The same principle, finally, is the basis of self-consciousness which accompanies all sense-perception: since perception is different from the thing perceived, the senses which supply us with the picture of the object cannot also inform us of its objective reality.[3] The organ of the 'common sense' is the

γλυκὺ τοῦ λευκοῦ, ἀλλὰ δεῖ ἑνί τινι ἄμφω δῆλα εἶναι. It must therefore be one and the same faculty by which we distinguish different kinds of sensations from one another: and to this, in order that these may be compared with one another, these must be simultaneously present, meeting in it as two lines meet in a common point. (The details of this theory, which suggests many difficulties, cannot be here discussed; besides TRENDELENBURG *in loco*, see the discussion of it in KAMPE, *Erkenntnissth. d. Ar.* 107; BRENTANO, *Psychol. d. Ar.* 90 sqq.; BÄUMKER, 70 sqq.). Similarly c. 7, 431, a, 20: τίνι δ' ἐπικρίνει τί διαφέρει γλυκὺ καὶ θερμόν . . . ἔστι γάρ ἕν τι· οὕτω δὲ καὶ ἡ στιγμὴ καὶ ὅλως ὁ ὅρος [the boundary] &c. Just as one sense knows the distinction between white and black, so one and the same faculty can know the distinction between whiteness and sweetness. *De Somno*, 2, 455, a, 17: καὶ κρίνει δὴ καὶ δύναται κρίνειν ὅτι ἕτερα τὰ γλυκέα τῶν λευκῶν, οὔτε γεύσει οὔτε ὄψει οὔτ' ἀμφοῖν, ἀλλά τινι κοινῷ μορίῳ τῶν αἰσθητηρίων ἁπάντων. ἔστι μὲν γὰρ μία αἴσθησις &c. (see p. 66, n. 7, *supra*).

[1] Cf. i. 209, n. 3, *supra*.

[2] See p. 67, n. 2, *supra*, where this is shown to have been Aristotle's view.

[3] *De An.* iii. 2 *init.*: ἐπεὶ δ' αἰσθανόμεθα ὅτι ὁρῶμεν καὶ ἀκούομεν, ἀνάγκη ἢ τῇ ὄψει αἰσθάνεσθαι ὅτι ὁρᾷ, ἢ ἑτέρᾳ [sc. αἰσθήσει]. The former, however, is inadmissible, if for no other reason, because in that case we must assign colour to the seeing subject [the ὁρῶν πρῶτον), as to all visible things. *De Somno*, 2, 455, a, 15: ἔστι δέ τις καὶ κοινὴ δύναμις ἀκολουθοῦσα πάσαις, ῃ καὶ ὅτι ὁρᾷ

heart,[1] in which, as we have already seen, the general principle of the sensitive life resides.[2]

To this single faculty of perception, or 'common sense,' Aristotle proceeds to attribute a number of important mental phenomena.[3] It is the source of imagination and memory,[4] which are therefore shared by many brutes as well as by man. Imagination is a movement produced by sensation, an after-effect of the sense-perception[5]—in other words a spent sensa-

καὶ ἀκούει αἰσθάνεται [so BONITZ, *Arist. Stud.* iii. 72, reads according to the text of two MSS.; BEKK. has καὶ αἰσθ.]· οὐ γὰρ δὴ τῇ γε ὄψει ὁρᾷ ὅτι ὁρᾷ . . . ἀλλά τινι κοινῷ μορίῳ τῶν αἰσθητηρίων ἁπάντων.

[1] The heart is the ἓν κοινὸν αἰσθητήριον, εἰς ὃ τὰς κατ' ἐνέργειαν αἰσθήσεις ἀναγκαῖον ἀπαντᾶν (*De Juvent.* 1, 467, b, 28); τό γε κύριον τῶν αἰσθήσεων ἐν ταύτῃ τοῖς ἐναίμοις πᾶσιν. ἐν τούτῳ γὰρ ἀναγκαῖον εἶναι τὸ πάντων τῶν αἰσθητηρίων κοινὸν αἰσθητήριον (*ibid.* c. 3, 469, a, 10).

[2] Cf. *supra*, p. 42 sq. and p. 66, n. 6, and on the question how the sensations of the three senses which have their seat in the head are transmitted to the heart, p. 67, n. 1. But the heart is also the seat of the sense of touch (see p. 67, n. 1, *supra*); and to this the remark, *De Somno*, 2, 455, a, 22, seems to refer, where it is said that the ἴδιον and the κοινὸν of αἴσθησις [for this we must suppose to be the meaning of τοῦτο, l. 22, placing with BONITZ the words οὐ γὰρ . . . χρώματος, l. 17–22, in a parenthesis] ἅμα τῷ ἁπτικῷ μάλισθ' ὑπάρχει, this being the only one of the senses whose organ is also the central organ of sensation.

[3] For the following account see FREUDENTHAL, *Ueber d. Begriff d. Wortes φαντασία b. Arist.* 1863.

[4] *De An.* iii. 3, 428, a, 9, 21, c. 10, 433, a, 11, c. 11 *init.*; *Hist. An.* i. 1, 488, b, 25; *De Mem.* 1, 449, a, 28, 450, a, 15, c. 2, 453, a, 6; *Metaph.* i. 1, 980, a, 27, b, 25; cf. p. 71, n. 3, p. 73, n. 4, *infra.* Some animals, therefore, dream as well as man, *Divin. p. S.* 2, 463, b, 12.

[5] After showing, *De An.* iii. 3, that it is neither αἴσθησις, nor νοῦς, nor ἐπιστήμη, nor δόξα, nor a combination of δόξα and αἴσθησις, Aristotle proceeds, 428, b, 10: ἀλλ' ἐπειδὴ ἔστι κινηθέντος τουδὶ κινεῖσθαι ἕτερον ὑπὸ τούτου, ἡ δὲ φαντασία κίνησίς τις δοκεῖ εἶναι καὶ οὐκ ἄνευ αἰσθήσεως γίγνεσθαι ἀλλ' αἰσθανομένοις καὶ ὧν αἴσθησις ἐστὶν, ἔστι δὲ γίνεσθαι κίνησιν ὑπὸ τῆς ἐνεργείας τῆς αἰσθήσεως, καὶ ταύτην ὁμοίαν ἀνάγκη εἶναι τῇ αἰσθήσει, εἴη ἂν αὕτη ἡ κίνησις οὔτε ἄνευ αἰσθήσεως ἐνδεχομένη οὔτε μὴ αἰσθανομένοις ὑπάρχειν, καὶ πολλὰ κατ' αὐτὴν καὶ ποιεῖν καὶ πάσχειν τὸ ἔχον, καὶ εἶναι καὶ ἀληθῆ καὶ ψευδῆ. L. 30: εἰ οὖν μηθὲν μὲν ἄλλο ἔχει τὰ εἰρημένα

tion.[1] The motion caused by the external impression upon the sensitive organ not only produces an immediate effect in the sensation which follows, but continues in the organ,[2] whence under certain circumstances it passes to the central organ, and in this way reproduces the pictorial image,[3] even in the absence of the ob-

ἡ φαντασία [so the majority of the MSS.; TORSTR. with E reads ἡ ἡ φαντ., but considers the words spurious; BEKK. and TREND. are certainly wrong in reading ἡ μὴ φαντασίαν] τοῦτο δ' ἐστὶ [TORSTR. conj. ἔχει] τὸ λεχθὲν, ἡ φαντασία ἂν εἴη κίνησις ὑπὸ τῆς αἰσθήσεως τῆς κατ' ἐνέργειαν γιγνομένη. *De Insomn.* 1, 459, a, 17 (a passage which establishes the true reading in *De An.* 429, a, 2 as γιγνομένη, not -ης).

[1] *Rhet.* i. 11, 1370, a, 28: ἡ δὲ φαντασία ἐστὶν αἴσθησίς τις ἀσθενής.

[2] *De Mem.* 1, 350, a, 27: the πάθος, where ἕξις is μνήμη, consists of a kind of ζωγράφημα, which αἴσθησις produces in the soul (*i.e.* the ψυχὴ αἰσθητική) and in the part of the body where it resides; ἡ γὰρ γινομένη κίνησις ἐνσημαίνεται οἷον τύπον τινὰ τοῦ αἰσθήματος καθάπερ οἱ σφραγιζόμενοι τοῖς δακτυλίοις. On this account, under deep emotion or in the early years of childhood, memory is weak, the excitement being too strong, καθάπερ ἂν εἰς ὕδωρ ῥέον ἐμπιπτούσης τῆς κινήσεως καὶ τῆς σφραγῖδος; conversely in old age διὰ τὸ ψήχεσθαι [wear] καὶ διὰ σκληρότητα τοῦ δεχομένου τὸ πάθος οὐκ ἐγγίνεται ὁ τύπος. The same phenomenon is explained, c. 2, 453, b, 4, as the result, not only in the case of children but of old men, of a κίνησις caused in the former case by the rapid growth, in the latter by the rapid decay, of the body. The latter passage would of itself be sufficient to prove that in Aristotle's view the persistence of the sense-impressions, which are compared to the impress of a stamp, is not that of actual material copies of the objects (even in his account of sense-perception itself, p. 58 sq. *supra*, Aristotle gives no countenance to such a view), nor even that of qualitative changes in the organs themselves, but is due to the continuance in the organs of the motions caused by the original sensation. This, however, becomes still more obvious from the quotations that follow in the next note. On the whole subject see FREUDENTHAL, p. 20 sqq.

[3] This is the sense of the passage in π. ἐνυπν. c. 3, already referred to. After showing in the beginning of c. 2, ὅτι καὶ ἀπελθόντος τοῦ θύραθεν αἰσθητοῦ ἐμμένει τὰ αἰσθήματα αἰσθητὰ ὄντα, that the faculty which gives judgment upon the corresponding objects is different from that which supplies the sense with the images of them (cf. p. 67, n. 2), and that in this way we get the delirious fancies of fever and other illusions of sense into which we are seduced by passion

ject.[1] To this power of reproducing images of sense Aristotle gives the name of Phantasy; and to the images themselves the cognate name of phantasms.[2] Phantasy,

and emotion, Aristotle proceeds in c. 3: the motions caused partly by impressions made upon us from without, partly by those produced from within the body itself, are repressed during the day by the activity of sense and thought, and rendered imperceptible [ἀφανίζονται ὥσπερ παρὰ πολὺ πῦρ ἔλαττον—as the light of the stars before the sun]; νύκτωρ δὲ δι' ἀργίαν τῶν κατὰ μόριον αἰσθήσεων καὶ ἀδυναμίαν τοῦ ἐνεργεῖν . . . ἐπὶ τὴν ἀρχὴν τῆς αἰσθήσεως [the heart] καταφέρονται καὶ γίνονται φανεραὶ καθισταμένης τῆς ταραχῆς. The same thing takes place in sleep (461, a, 18 sqq.): τὰ φαντάσματα καὶ αἱ ὑπόλοιποι κινήσεις αἱ συμβαίνουσαι ἀπὸ τῶν αἰσθημάτων [those lingering remnants of the motions produced by impressions upon the senses which are the cause of phantasms; cf. p. 70, n. 5, *supra*] ὁτὲ μὲν ὑπὸ μείζονος οὔσης τῆς εἰρημένης κινήσεως ἀφανίζονται πάμπαν, ὁτὲ δὲ τεταραγμέναι φαίνονται . . . καθισταμένου δὲ καὶ διακρινομένου τοῦ αἵματος ἐν τοῖς ἐναίμοις, σωζομένη τῶν αἰσθημάτων ἡ κίνησις ἀφ' ἑκάστου τῶν αἰσθητηρίων [the motion caused by the sense-impression which is transmitted from the organs of sense to the heart] ἐρρωμένα τε ποιεῖ τὰ ἐνύπνια, καὶ [sc. ποιεῖ] φαίνεσθαί τι καὶ δοκεῖν διὰ μὲν τὰ ἀπὸ τῆς ὄψεως καταφερόμενα ὁρᾶν, διὰ δὲ τὰ ἀπὸ τῆς ἀκοῆς ἀκούειν. ὁμοιοτρόπως δὲ καὶ ἀπὸ τῶν ἄλλων αἰσθητηρίων. For the ἀρχὴ accepts as true what the senses report, so long as it remains uncontradicted by a more authoritative report (cf. p. 67, n. 2, *supra*); ὅταν γὰρ καθεύδῃ [as is explained, 461, b, 10], κατιόντος τοῦ πλείστου αἵματος ἐπὶ τὴν ἀρχὴν συγκατέρχονται αἱ ἐνοῦσαι κινήσεις. These exist, however, partly δυνάμει partly ἐνεργείᾳ, the former appearing (ἐπιπολάζειν) when the others by which they have hitherto been repressed disappear; καὶ λυόμεναι ἐν ὀλίγῳ τῷ λοιπῷ αἵματι τῷ ἐν τοῖς αἰσθητηρίοις κινοῦνται [in the blood which is left behind in the organs of sense after the main body of it has flowed back to the heart, the sensitive motions contained in it, which have hitherto lain latent, become liberated owing to the exhaustion, by the diminution of the quantity of blood, of those motions which have hitherto restrained them], ἔχουσαι ὁμοιότητα ὥσπερ τὰ ἐν τοῖς νέφεσιν, ἃ παρεικάζουσιν ἀνθρώποις καὶ κενταύροις ταχέως μεταβάλλοντα. So long as we keep hold even of a remnant of consciousness in sleep we do not mistake those images for the things; if on the other hand we have lost all consciousness that we are asleep, we take the one for the other. Dreams (τὰ φαινόμενα εἴδωλα καθεύδοντι, 462, a, 11) are therefore only the remnants of the motions caused by sensation (461, b, 21), as which they are often clearly recognised at the moment of waking.

[1] Hence he says, *De An.* iii. 8, 432, a, 9: τὰ γὰρ φαντάσματα ὥσπερ αἰσθήματά ἐστι πλὴν ἄνευ ὕλης.

[2] For proof of this see BONITZ,

moreover, he holds to be the source of the images which accompany thought.[1] To these it is impossible to apply the above sensational explanation: [2] they must be considered as in some way independent products of intellectual activity. Aristotle, however, has given us no account of their origin or their relation to the images of sense. While the reports of the single senses in their own departments are unerringly true, the imagination and the general reports of the 'common sense' are exposed to illusion.[3] If an imagination relates to earlier perceptions and presents a copy of them, then we call it memory (*μνήμη*); [4]

*Ind. Arist.* 811, b, 11 sqq. 812, a, 9, 25.

[1] See next chapter.

[2] Aristotle actually distinguishes between two kinds of φαντασία. *De An.* iii. 10, 433, b, 28: ὀρεκτικὸν δὲ [sc. τὸ ζῷον ἐστὶν] οὐκ ἄνευ φαντασίας. φαντασία δε πᾶσα ἢ λογιστικὴ ἢ αἰσθητική. ταύτης μὲν οὖν καὶ τὰ ἄλλα ζῷα μετέχει. c. 11, 434, a, 5: ἡ μὲν οὖν αἰσθητικὴ φαντασία . . . καὶ ἐν τοῖς ἄλλοις ζῴοις ὑπάρχει, ἡ δὲ βουλευτικὴ ἐν τοῖς λογιστικοῖς. As αἰσθητικὴ φαντ. can only here mean the power of reproducing from the motions that linger in the organs of sense the images represented by them, the φαντ. βουλευτικὴ (or λογιστική: τὸ γὰρ βουλεύεσθαι καὶ λογίζεσθαι ταὐτόν, *Eth.* vi. 2, 1139, a, 12) must mean the power of projecting images of things in the future, of means and ends whose comparative value it is the function of βούλευσις to estimate with a view to the exercise of choice. Such images, however, are not, like those of memory, given in the excitations of the organs of sense.

[3] See i. 209, n. 3, and ii. 67, n. 2, *supra*.

[4] *De Mem.* i: all memory refers to the past and therefore presupposes the intuition of time, 449, b, 28: ὅσα χρόνου αἰσθάνεται, ταῦτα μόνα τῶν ζῴων μνημονεύει, καὶ τούτῳ ᾧ αἰσθάνεται. (See i. 436, n. 2, ii. 70, n. 4, and 71, n. 3, *supra*.) The faculty upon which memory depends is phantasy, for it always refers primarily to sensory images, and in a derivative and secondary sense to thoughts in so far as thought itself is impossible without a pictorial image, as is shown (450, a, 15) by the fact that brutes have memory as well as man. Cf. 450, a, 13: ὥστε τοῦ νοουμένου [νοοῦντος or νοῦ ?] κατὰ συμβεβηκὸς ἂν εἴη, καθ' αὑτό δὲ τοῦ πρώτου αἰσθητικοῦ. 450, a, 22: τίνος μὲν οὖν τῶν τῆς ψυχῆς ἐστὶν ἡ μνήμη, φανερὸν, ὅτι οὗπερ καὶ ἡ φαντασία· καὶ ἔστι μνημονευτὰ καθ' αὑτὰ μὲν ὅσα ἐστὶ φανταστὰ, κατὰ συμβεβηκὸς δὲ ὅσα μὴ ἄνευ φαντασίας. The φάντασμα,

and the conscious reproduction of a memory is recollection (ἀνάμνησις). Man alone is capable of recollection, since he alone can reflect;[1] but memory, as we have said, is shared by brutes. Recollection depends upon the natural coherence of the movements which produce the imaginative pictures; by virtue of this coherence one image is called up by another formerly connected with it.[2] These movements have their seat in the

however, only becomes a recollection (μνημόνευμα) when we recognise in it the copy of an actual perception, when we connect with it the thought that it is the repetition of a previous perception—a point upon which we are not always certain. Accordingly we sometimes fail to recognise actual memories as such, and at other times mistake mere fancies for memories (450, b, 18 sqq.). Τί μὲν οὖν ἐστὶ μνήμη [the chap. concludes] καὶ τὸ μνημονεύειν, εἴρηται, ὅτι φαντάσματος, ὡς εἰκόνος οὗ φάντασμα, ἕξις (which should be taken, not, with FREUDENTHAL, *ibid.* 36 and elsewhere, in its narrow sense discussed i. 285, n. 3, *supra*, but in the simple sense of having or keeping; cf. c. i. 449, b, 25) καὶ τίνος μορίου τῶν ἐν ἡμῖν, ὅτι τοῦ πρώτου αἰσθητικοῦ καὶ ᾧ χρόνου αἰσθανόμεθα.

[1] *Hist. An.* i. 1 *fin.*; *De Mem.* ii. 451, b, 2, 453, a, 6 sqq. As the reason of this, it is said in 453, a, 9: ὅτι τὸ ἀναμιμνήσκεσθαί ἐστιν οἷον συλλογισμός τις· ὅτι γὰρ πρότερον ἢ εἶδεν ἢ ἤκουσεν ἤ τι τοιοῦτον ἔπαθε, συλλογίζεται ὁ ἀναμιμνησκόμενος, καὶ ἔστιν οἷον ζήτησίς τις. τοῦτο δ' οἷς καὶ τὸ βουλευτικὸν ὑπάρχει, φύσει μόνοις συμβέβηκεν· καὶ γὰρ τὸ βουλεύεσθαι συλλογισμός τίς ἐστιν. *H. An. ibid.* also connects βουλεύεσθαι with ἀναμιμνήσκεσθαι as peculiar to man.

[2] Perhaps Aristotle gives this explanation, *ibid.* 451, a, 10 sqq., with a tacit reference to the mnemonics mentioned by him in other passages (*De An.* iii. 3, 427, b, 19; *De Insomn.* 1. 458, b, 20; *Top.* viii. 14, 163, b, 28). Recollection, he says, takes place, ἐπειδὴ πέφυκεν ἡ κίνησις ἥδε γενέσθαι μετὰ τήνδε; if the connection is a necessary one, the first is invariably recalled by the second; if it is merely habitual, only as a rule. Sometimes, however, a single occurrence creates a fixed habit. Ἀναμιμνήσκεσθαι both in the case of intentional and unintentional recollection consists in recalling former motions in their order until we arrive at the object of search. We start in this process ἀπὸ τοῦ νῦν [*i.e.* from a present intuition] ἢ ἄλλου τινὸς, καὶ ἀφ' ὁμοίου ἢ ἐναντίου ἢ τοῦ σύνεγγυς. Aristotle has not further developed these hints upon the so-called laws of the association of ideas, nor has he explained whether of the two principles of ἀνάμνησις, ἀνάγκη and ἔθος, the former embraces only those cases

heart.[1] Lastly, from sensation and imagination arise the feelings of pleasure and pain,[2] and the appetites, whereof we shall have to treat in detail when we come to Anthropology.[3]

Aristotle regarded Sleep and Waking as conditions of the common faculty of perception.[4] Sleep is the imprisonment of that faculty, waking is its free activity.[5]

in which the physical movement that underlies the pictorial image spontaneously produces other such movements or includes also those in which the content of a given presentation conducts necessarily to the recollection of certain others. On the other hand, Aristotle gives us the general law which determines the succession of those associations which depend upon habit, viz. that each presentation is recalled by that which immediately preceded it on its former occurrence: τῷ γὰρ ἔθει ἀκολουθοῦσιν αἱ κινήσεις ἀλλήλαις, ἥδε μετὰ τήνδε (451, b, 28, cf. l. 22).

[1] *Ibid.* 453, a, 14 sqq., where it is stated, ὅτι σωματικόν τι τὸ πάθος, καὶ ἡ ἀνάμνησις ζήτησις ἐν τοιούτῳ φαντάσματος . . . ὁ ἀναμιμνησκόμενος σωματικόν τι κινεῖ ἐν ᾧ τὸ πάθος; what this is is not, indeed, further explained. Since, however, the seat of memory in general is the heart, it must be this which is meant.

[2] *De An.* ii. 2, 413, b, 23: ὅπου μὲν γὰρ αἴσθησις, καὶ λύπη τε καὶ ἡδονή, ὅπου δὲ ταῦτα, ἐξ ἀνάγκης καὶ ἐπιθυμία. iii. 3, 414, b, 4: ᾧ δ' αἴσθησις ὑπάρχει, τούτῳ ἡδονή τε καὶ λύπη καὶ τὸ ἡδύ τε καὶ λυπηρόν. (Similarly *De Somno*, 1, 454, b, 29.) c. 7, 431, a, 10: ἔστι τὸ ἥδεσθαι καὶ λυπεῖσθαι τὸ ἐνεργεῖν τῇ αἰσθητικῇ μεσότητι πρὸς τὸ ἀγαθὸν καὶ κακόν, ᾗ τοιαῦτα. *Phys.* vii. 3, 247, a, 24: ἡ γὰρ κατ' ἐνέργειαν τὸ τῆς ἡδονῆς ἢ διὰ μνήμην ἢ ἀπὸ τῆς ἐλπίδος. εἰ μὲν οὖν κατ' ἐνέργειαν, αἴσθησις τὸ αἴτιον, εἰ δὲ διὰ μνήμην ἢ δι' ἐλπίδα, ἀπὸ ταύτης· ἢ γὰρ οἷα ἐπάθομεν μεμνημένοις τὸ τῆς ἡδονῆς ἢ οἷα πεισόμεθα ἐλπίζουσιν. We shall return to pleasure in dealing with the Ethics, but neither here nor there do we find an accurate psychological account of the feeling.

[3] Cf. meantime *De An.* ii. 2, 413, b, 23, c. 3, 414, b, 1–16, iii. 7, 431, a, 8 sqq. iii. 11; *De Somno*, i. 454, b, 29; *Part. An.* ii. 17, 661, a, 6.

[4] *Ibid.* c. 2, 455, a, 5–b, 13: sleep and waking do not belong to the senses individually, but to the κύριον τῶν ἄλλων πάντων αἰσθητήριον, the πρῶτον ᾧ αἰσθάνεται πάντων.

[5] *De Somno*, i. *e.g.* 454, a, 32: εἰ τοίνυν τὸ ἐγρηγορέναι ὥρισται τῷ λελύσθαι τὴν αἴσθησιν . . . τὸ δ' ἐγρηγορέναι τῷ καθεύδειν ἐναντίον . . . τοῦτο δ' ἐστὶν ἀδυναμία δι' ὑπερβολὴν τοῦ ἐγρηγορέναι . . . ἀνάγκη πᾶν τὸ ἐγρηγορὸς ἐνδέχεσθαι καθεύδειν· ἀδύνατον γὰρ ἀεὶ ἐνεργεῖν. It is impossible, however, that it should sleep for ever, for to sleep without awaking would be to lose the power of sensation. 454, b, 25: τῆς δ'

Hence these conditions are only exhibited by beings capable of sensation: but with them they are invariable, for the faculty of perception cannot remain active without experiencing exhaustion from time to time.[1] The object of sleep is to maintain life, to refresh and restore; and this again subserves the higher purpose of waking activity.[2] The natural causes of sleep lie in the nutritive process. The vital warmth drives the fumes away from the food upwards; collecting there, they make the head heavy and induce sleepiness; but cooling in the brain, they sink down again and cause a refrigeration of the heart, in consequence of which the activity of this chief organ of sensation is suspended. This condition lasts until the food is digested and the purer blood, destined for the upper portions of the body, is secreted from the denser sort, which passes downwards.[3] Dreams arise from the internal motions of the organs of sense, which continue after the transmission of external impressions has ceased. In the waking state these motions disappear beneath the action of sense and thought; but in sleep, on the contrary, and especially towards the end of sleep, when the disturbance of the blood has ceased, they stand forth more clearly.[4] Hence it may happen that an internal motion

*αἰσθήσεως τρόπον τινὰ τὴν μὲν ἀκινησίαν καὶ οἷον δεσμὸν ὕπνον εἶναί φαμεν, τὴν δὲ λύσιν καὶ τὴν ἄνεσιν ἐγρήγορσιν.*

[1] See preceding note and *De Somno*, 1, 454, b, 14–455, a, 3, where it is said that all animals except ostracea are actually observed to sleep, and that, on the general grounds mentioned above, we must suppose that these sleep also.

[2] *Ibid.* ii. 455, b, 16–28, c. 3, end.

[3] *De Somno*, c. 3, where this point is very fully discussed.

[4] As is shown and interestingly illustrated by careful observations from cognate fields, *π. ἐνυπνίων* (see p. 71, n. 3, *supra*), cf. *Divin.*

in the body, which would not be perceived in waking hours, makes itself felt in dreams, or that dreams, reversely, impel people to subsequent action by the images which they present to the soul. It is also possible that sensible impressions reach us in sleep which would not have struck upon our senses in the more disturbed atmosphere of the daytime, or would have failed to arouse our attention. Thus some prophetic dreams may be explained naturally; anything beyond this must be considered a casual coincidence, for we notice that many dreams do not come true at all.[1]

Death, like sleep, must be explained by an alteration in the central organ. It happens when the vital warmth, which resides in the heart (or the correspond-

*p. S.* 1, 463, a, 7 sqq. Dreams according to the account here given (c. 3, 462, a, 8, 29) are *κινήσεις φανταστικαὶ* [movements caused by fancy] *ἐν τοῖς αἰσθητηρίοις, . . . τὸ φάντασμα τὸ ἀπὸ τῆς κινήσεως τῶν αἰσθημάτων, ὅταν ἐν τῷ καθεύδειν ᾖ, ᾗ καθεύδει, τοῦτ' ἐστὶν ἐνύπνιον.*

[1] This is essentially the doctrine set forth in the treatise *π. τῆς καθ' ὕπνον μαντικῆς*. It cannot, on the other hand, be regarded as the expression of Aristotle's scientific conviction when in one of his Dialogues (see i. 390, n. 3, *supra*) he speaks of the soul in sleep and just before death, when about to withdraw from the body into its true being, as possessed of a power of insight into the future. Such a view, it is much more probable, does not at all express his own conviction, but merely an opinion which, he thinks, may have given rise to the belief in the existence of the Gods. If at the time of the composition of this dialogue he attributed any real value to this opinion, it would be only one of the many proofs of the influence which the views of Plato still exercised over him. His whole treatment of the subject as given above shows how far he was at a later time from regarding sleep as a higher condition of the spiritual life. The views that CIC. *Divin.* i. 38, 81 attributes to Aristotle on the power of prophetic foresight ('aliquid in animis præsagiens atque divinum') said to be possessed by hypochondriacs were much more probably taken from one of the Dialogues, than from *Divin. p. S.* c. 2 *init.* or *Eth. Eud.* vii. 14, 1248, a, 39.

ing member), is extinguished.[1] The cause of this extinction, which affects all fire alike, is generally the want of nourishment. This may be brought about in two ways: either the operation of antagonistic materials[2] may prevent the fire from maturing its aliment, which in the case of life is the vapour rising from the blood; or else an excess of warmth may induce too rapid consumption of it.[3] The latter takes place in the natural decay of old age. During a length of time the respiratory organs have been growing gradually harder and drier, moving themselves in consequence more slowly, and becoming incapable of providing the necessary covering process for the inner heart.[4] Accordingly the inner fire decreases more and more, until at last it is extinguished, like a little flame, by some insignificant movement.[5] The causes of greater or less longevity are discussed by Aristotle in a special treatise.[6]

Up to this point we have dealt exclusively with the common conditions and peculiarities of animal life. These common characteristics are displayed in the most different forms and degrees of completeness by the different races of animals. The animal kingdom exhibits

[1] *De Vita*, c. 4; see pp. 7 and 42, *supra*, and cf. *Respir.* 17, 478, b, 31 sqq. 479, a, 7 sqq.

[2] As in the extinction of fire by water.

[3] *De Vita*, c. 5, 496, b, sq. The third possible case, when the supply of the requisite aliment fails, as in death by starvation, is here unnoticed by Aristotle.

[4] That this is the purpose served by respiration has already been proved at p. 43.

[5] *De Respir.* 17, 479, a, 7 sqq. cf. *De Vita*, 5, 469, b, 21, 470, a, 5 (where the suffocation of fire by coals is cited as an illustration, and explained in the same way). *Meteor.* iv. 1, 379, a, 3; *Longit. V.* 5, 466, a, 19, 22, b, 14; *Gen. An.* v. 3, 783, b, 6.

[6] Περὶ μακροβιότητος καὶ βραχυβιότητος: cf. *Gen. An.* iv. 10, 777, b, 3. Upon the results there arrived at, c. 5, 6, it is impracticable here to enter more fully.

a gradual and continuous progression from the poorest and most undeveloped forms of life to the highest, and it is Aristotle's undisputed distinction to have first discovered this scale and to have followed it through all aspects of animal life.[1] Even the local habitations of the different animals, the elements to which they belong, enable us to distinguish their several degrees of honour and importance.[2] Nor must the variations

[1] As has already been generally shown, p. 20 sqq. *supra*; cf. i. 466 sqq.

[2] Aristotle frequently touches upon this point. His statements upon it, however, are not always consistent with one another either in regard to the birth and habitations, or in regard to the elementary constitution of different living creatures. *Meteor.* iv. 4, 382, a, 6 (*De An.* i. 5, 411, a, 9 relates to another subject) he says: *ἐν γῇ καὶ ἐν ὕδατι ζῷα μόνον ἐστιν, ἐν ἀέρι δὲ καὶ πυρὶ οὐκ ἔστιν, ὅτι τῶν σωμάτων ὕλη ταῦτα.* (On the statement in the latter clause *v.* i. 483, n. 2, *supra*). On the other hand, according to CIC. *N. D.* ii. 15, 42; PLUT. *Plat. V.* 20, 1 (*Fr. Ar.* 19), he had declared, probably in the dialogue *π. φιλοσοφίας*, that as there are land-, water-, and air-animals (*ζῷα χερσαῖα, ἔνυδρα, πτηνὰ*, or according to Cic. 'cum aliorum animantium ortus in terra sit, aliorum in aqua, in aëre aliorum'), there must also be *ζῷα οὐράνια*, and the stars must therefore be animate. Again, *Hist. An.* v. 19, 552, b, 6–15, he speaks of worms which spring by spontaneous generation from ice, flies which spring from fire, whereas, *Gen. et Corr.* ii. 3, 330, b, 29, he had expressly denied that anything at all springs from either ice or fire. If we may put down to a popular mode of speech the mention of air-animals in the treatise *π. φιλοσοφίας*, by which are only meant winged animals, yet the fire-animals mentioned in his *Natural History* and alluded to by other writers (cf. FABRICIUS, on Sext. Pyrrh. i. 41. IDELER, on *Meteorol.* ii. 454; PHILO, *Plant. Noë*, 216, A, *De Gigant.* 285, A) cannot be reconciled with his other statements. But, secondly, with regard to the material constituents of living bodies, Aristotle holds (*De An.* i. 5, 411, a, 9. iii. 13 *init.*, and the passage referred to in i. 482, n. 3, *sup.*) that while each contains a mixture of all the elements, there may be a preponderance of different elements in different bodies. Here also, however, his statements are not always consistent. *De Respir.* 13, 477, a, 27, he says: *τὰ μὲν γὰρ ἐκ γῆς πλείονος γέγονεν, οἷον τὸ τῶν φυτῶν γένος* [and acc. to *Gen. An.* ii. 6, 743, b, 10, shell-fish and crustacea], *τὰ δ' ἐξ ὕδατος οἷον τὸ τῶν ἐνύδρων· τῶν δὲ πτηνῶν καὶ πεζῶν τὰ μὲν ἐξ ἀέρος τὰ δ' ἐκ πυρός. ἕκαστα δ' ἐν τοῖς οἰκείοις τόποις ἔχει τὴν τάξιν αὐτῶν.* On the other hand, *Gen. An.* iii. 11, 761, b, 13: *τὰ μὲν γὰρ φυτὰ θείη*

in their vital heat be neglected, as that is a point of the greatest moment in determining the perfection of animate existence.[1] Together with the vital heat must be mentioned the character of the blood and of the humours corresponding to it in other animals, on which depends the broad distinction between sanguineous and bloodless creatures.[2] The temper and intelligence of animals are regulated in a great measure by the constitution of their blood, while of course its influence over their physical structure is not less important.[3] It is only sanguineous animals which have flesh, the bloodless are

τις ἂν γῆς, ὕδατος δὲ τὰ ἔνυδρα, τὰ δὲ πεζὰ ἀέρος· τὸ δὲ μᾶλλον καὶ ἧττον καὶ ἐγγύτερον καὶ πορρώτερον πολλὴν ποιεῖ καὶ θαυμαστὴν διαφοράν. τὸ δὲ τέταρτον γένος οὐκ ἐπὶ τούτων τῶν τόπων δεῖ ζητεῖν· καίτοι βούλεταί γέ τι κατὰ τὴν τοῦ πυρὸς εἶναι τάξιν. . . ἀλλὰ δεῖ τὸ τοιοῦτον γένος ζητεῖν ἐπὶ τῆς σελήνης· αὕτη γὰρ φαίνεται κοινωνοῦσα τῆς τετάρτης ἀποστάσεως. The whole class of πεζὰ (land animals and birds) are here assigned to the air, just as *De Sensu*, c. 5, 444, a, 19, men and quadrupeds are classed with those ὅσα μετέχει μᾶλλον τῆς τοῦ ἀέρος φύσεως: fire-animals on the other hand are said to inhabit the moon, of which there is a suggestion also *De An.* ii. 3, 414, b, 18 (see p. 20, n. 3, *supra*). But it remains to be asked how in the ethereal region, to which the moon also belongs, there can be beings constituted of all the elements. Cf. MEYER, *Arist. Thierk.* 413 sq 393, and i. 472 sqq. *supra.*

[1] *De Resp.* 13, 477, a, 16: τὰ τιμιώτερα τῶν ζῴων πλείονος τετύχηκε θερμότητος· ἅμα γὰρ ἀνάγκη καὶ ψυχῆς τετυχηκέναι τιμιωτέρας.

[2] On this distinction, of which Aristotle very frequently makes use, see, besides many other passages, *Hist. An.* i. 4–6, 489, a, 30, 490, a, 21, 26 sqq. b, 9. ii. 15 *init* iv. 1 *init.* c. 3 *init.*; *Part. An.* ii. 2, 648, a, 1. c. 4, 650, b, 30, and the passages referred to 26, n. 1, *supra*. From *Part.* iii. 4, 665, a, 31 (Δημόκριτος δ' ἔοικεν οὐ καλῶς διαλαβεῖν περὶ αὐτῶν, εἴπερ ᾠήθη διὰ μικρότητα τῶν ἀναίμων ζῴων ἄδηλα εἶναι ταῦτα = their intestines) BRANDIS, ii. b. 1301 concludes that Democritus had made the distinction between sanguineous and bloodless animals; the inference, however, is a doubtful one, as Democritus may have mentioned only particular species of animals, and the general designation of them as ἄναιμα may be Aristotle's.

[3] *Part. An.* ii. 2, 648, a, 2 (see p. 39, n. 6, *supra*); c. 4, 651, a, 12: πολλῶν δ' ἐστὶν αἰτία ἡ τοῦ αἵματος φύσις καὶ κατὰ τὸ ἦθος τοῖς ζῴοις καὶ κατὰ τὴν αἴσθησιν, εὐλόγως· ὕλη γάρ ἐστι παντὸς τοῦ σώματος.

provided with something analogous to flesh;[1] the former have a heart, the latter another kind of central organ.[2] The vital heat and composition of the blood, again, determine the development of the organs of refrigeration and secretion—the brain, lungs, kidneys, bladder, and their peculiar functions.[3] In everything relating to the motion and posture of animals, Aristotle does not fail to recognise a special significance. Some tribes grow like plants adhering to the ground: the more perfect races, on the contrary, are capable of locomotion at will.[4] Furthermore, he traces very considerable differences in the organs of motion and the modes of progression displayed by the latter.[5] It is only in the case of locomotive creatures that we find the opposition of right and left, to which Aristotle attributed much importance,[6] together with a more complex organisation.[7] Lastly, while in shell-fish and plants the head looks downwards, and while in animals without feet or with many feet it is turned to the middle of the world, it is turned upwards in bipeds, and particularly in man.[8]

[1] See p. 26, n. 2, *supra*.

[2] See p. 26, n. 7; p. 41, n. 3, *sup*.

[3] See p. 26, n. 8; p. 40, n. 1, and p. 43, n. 6, *supra*.

[4] *Hist. An.* viii. 1, 588, b, 10 sqq.; *Part. An.* iv. 5, 681, a, 12–20; *Ingr. An.* 19; *De An.* ii. 3; 415, a, 6, and p. 49, n. 5, *supra*.

[5] Even birds seem stunted (κεκολόβωται) in this respect, but fish even more so (*Part. An.* iv. 13 *init.*); in the motion of serpents and worms there is properly no distinction of right and left (*Ingr. An.* 4, 705, b, 22 sqq.); in the case of insects the multitude of their feet indicates deficient unity and centralisation of the vital force (*ibid.* c. 7), while—in common with some birds—they have little power of steering their flight (*ibid.* 10, 710, a, 4).

[6] See p. 33, n. 3, *sup.*, and *Ingr. An.* 4, 705, b, 13 to end. Aristotle there remarks (706, a, 18) that the distinction between right and left reaches its highest development in man, διὰ τὸ κατὰ φύσιν μάλιστα ἔχειν τῶν ζῴων. φύσει δὲ βέλτιόν τε τὸ δεξιὸν τοῦ ἀριστεροῦ καὶ κεχωρισμένον.

[7] *Part. An.* iv. 7 *init.*

[8] *Part. An.* iv. 7, 683, b, 18; *Ingr. An.* c. 5; *De Vita*, 1, 468,

The structure of the body and the relation of its members correspond to these differences of posture.[1] In human beings the upper portion of the body is lighter than the lower, for the sake of their intellectual activity, and because of their greater warmth. In quadrupeds the size and weight of these parts are greater. As the vital heat decreases, and the earthly ingredients begin to preponderate, the number of the feet is multiplied, until at last they disappear, and the whole body becomes one great foot. Beyond this point the head begins to turn downwards, sensation disappears, the animal becomes a vegetable.[2] The size of animals, again,

a, 5. Man's upright posture is explained, *Respir.* 13, 477, a, 20, as the result of the purity and abundance of his blood; *Part An.* ii. 7, 653, a, 30, iii. 6, 669, b, 4, it is accounted for by the cognate fact of his higher temperature, heat having the effect of raising the body, as is proved by the fact that warm-blooded quadrupeds (the ζῳοτόκα) are the more upright. *Part. An.* iv. 10, 686, a, 25, the argument is put teleologically: man has arms instead of fore-feet, ὀρθὸν μὲν γάρ ἐστι μόνον τῶν ζῴων διὰ τὸ τὴν φύσιν αὐτοῦ καὶ τὴν οὐσίαν εἶναι θείαν· ἔργον δὲ τοῦ θειοτάτου τὸ νοεῖν καὶ φρονεῖν· τοῦτο δ' οὐ ῥᾴδιον πολλοῦ τοῦ ἄνωθεν ἐπικειμένου σώματος· τὸ γὰρ βάρος δυσκίνητον ποιεῖ τὴν διάνοιαν καὶ τὴν κοινὴν αἴσθησιν. The increased weight of the upper portions of the body requires that it should be placed horizontally on several legs, οὐ δυναμένης φέρειν τὸ βάρος τῆς ψυχῆς. πάντα γάρ ἐστι τὰ ζῷα νανώδη τἆλλα παρὰ τὸν ἄνθρωπον· νανῶδες γάρ ἐστιν οὗ τὸ μὲν ἄνω μέγα τὸ δὲ φέρον τὸ βάρος καὶ πεζεῦον μικρόν &c. [cf. i. 467, n. 2, *supra*] . . . διὸ καὶ ἀφρονέστερα πάντα τὰ ζῷα τῶν ἀνθρώπων ἐστίν. . . . αἴτιον δ' . . . ὅτι ἡ τῆς ψυχῆς ἀρχὴ πολλῷ δὴ δυσκίνητός ἐστι καὶ σωματώδης. ἔτι δ' ἐλάττονος γενομένης τῆς αἰρούσης θερμότητος καὶ τοῦ γεώδους πλείονος, τά τε σώματα ἐλάττονα τῶν ζῴων ἐστὶ καὶ πολύποδα, τέλος δ' ἄποδα γίγνεται καὶ τεταμένα πρὸς τὴν γῆν. μικρὸν δ' οὕτω προβαίνοντα καὶ τὴν ἀρχὴν ἔχουσι κάτω καὶ τὸ κατὰ τὴν κεφαλὴν μόριον τέλος ἀκίνητόν ἐστι καὶ ἀναίσθητον, καὶ γίνεται φυτόν.

[1] *Ingr. An.* c. 11: since man is a biped and designed for an upright walk, the upper parts of his body must be lighter, the lower heavier. Birds cannot have the upright posture; man on account of this posture cannot have wings (for the reason given for this, the student must consult Aristotle himself). Cf. prev. n. and *Hist. An.* ii. 4, 500, b, 26.

[2] *Part. An.* iv. 10; see p. 81, n. 8, *supra*.

corresponds to their place in the scale of existence: the warmer animals, according to Aristotle's notion, are generally speaking greater, and therefore the sanguineous animals are larger than the bloodless, although he does not fail to notice several exceptions to this rule.[1] Another obvious basis of classification may be found in the mode of birth and propagation. Some animals are viviparous, and form their offspring in the womb, either with or without the intervention of an egg.[2] A second class lay eggs, perfect in the case of birds, oviparous quadrupeds, and snakes; imperfect in the case of fishes, molluscs, and molluscous ostracea. A third kind propagate themselves by worms, produced sometimes with, sometimes without, copulation,[3] and attaining their ultimate form only after repeated transformation: almost all insects belong to this class. A fourth series spring by spontaneous generation from slime or from the excretions of animals: as, for instance, the majority of shell-fish and some fishes and insects.[4] The common fundamental type of all these different modes of propagation is development from worms through eggs to organic form;[5] but this process runs a different course, produ-

[1] *Respir.* 13, 477, a, 18; *Longit. V.* 5, 466, b, 18, 28; *Part. An.* iv. 10, 686, b, 28; *Hist. An.* i. 5, 490, a, 21 sqq.; *Gen. An.* ii. 1, 732, a, 16 sqq.

[2] The former is the case (*Gen. An.* ii. 1, 732, a, 32, i. 10, and elsewhere) with man, horses, cattle, dolphins, &c., the latter with cartilaginous fish and vipers.

[3] Instances of monogenesis Aristotle finds in bees and some fishes; *Gen. An.* iii. 10 (see p. 58, n. 1, *supra*), c. 5, 755, b, 20, ii. 5 (see p. 53, n. 1, *supra*); *Hist. An.* iv. 11, 538, a, 19.

[4] *Gen. An.* ii. 1, from 732. a, 25 onwards; *Hist. An.* i. 5, 489, a, 34–b, 18; *Polit.* i. 8, 1256, b, 10 sqq. On viviparous animals see especially *Gen. An.* ii. 4 sqq.; on the others and on spontaneous generation, the passage cited p. 58, n. 1, and p. 49, n. 4, *sup.*, and also MEYER, *Arist. Thierk.* 453 sqq.

[5] On the one hand, he holds

cing a more or less perfect result, according to the higher or the lower status of the animal. So, since the warmer and less earthy animals are the noblest, we may say that birth and development follow the warmth and material composition of the organisms.[1] The mode of their birth reflects the perfection or imperfection of their nature, and if we estimate the whole animal kingdom by this one standard, we obtain a scale which leads gradually from the most perfect down to the least perfect.[2] Nor are the senses equally distributed among

that the embryo even of oviparous and viviparous animals is vermicular at first, and, on the other, the chrysalisation of insects which appear first as worms is a transformation into the form of an egg; so that even here the law of analogy does not desert us; *Gen. An.* iii. 9, 758, a, 32: *σχεδὸν γὰρ ἔοικε πάντα σκωληκοτοκεῖν πρῶτον· τὸ γὰρ ἀτελέστατον κύημα τοιοῦτόν ἐστιν. ἐν πᾶσι δὲ καὶ τοῖς ζῳοτοκοῦσι καὶ τοῖς ᾠοτοκοῦσι τέλειον ᾠὸν τὸ κύημα τὸ πρῶτον ἀδιόριστον ὂν λαμβάνει τὴν αὔξησιν· τοιαύτη δ' ἐστὶν ἡ τοῦ σκώληκος φύσις. μετὰ δὲ τοῦτο τὰ μὲν ᾠοτοκεῖ τὸ κύημα τέλειον τὰ δ' ἀτελές, ἔξω δὲ γίγνεται τέλειον, καθάπερ ἐπὶ τῶν ἰχθύων εἴρηται πολλάκις. τὰ δ' ἐν αὑτοῖς ζῳοτοκοῦντα τρόπον τινὰ μετὰ τὸ σύστημα τὸ ἐξ ἀρχῆς ᾠοειδὲς γίνεται· περιέχεται γὰρ τὸ ὑγρὸν ὑμένι λεπτῷ, καθάπερ ἂν εἴ τις ἀφέλοι τὸ τῶν ᾠῶν ὄστρακον.* (Cf. on this point *Hist. An.* viii. 7.) The insect germ is a worm, whether it is born by ordinary or by spontaneous generation, and the same is true of caterpillars and of the supposed spiders' eggs. *προελθόντα δὲ πάντα τὰ σκωληκώδη καὶ τοῦ μεγέθους λαβόντα τέλος οἷον ᾠὸν γίγνεται* [in chrysalisation] . . . *τούτου δ' αἴτιον ὅτι ἡ φύσις ὡσπερανεὶ πρὸ ὥρας ᾠοτοκεῖ διὰ τὴν ἀτέλειαν τὴν αὑτῆς, ὡς ὄντος τοῦ σκώληκος ἔτι ἐν αὐξήσει ᾠοῦ μαλακοῦ.* The same is the case with moths and similar animals. Cf. n. 2, *infra*.

[1] *Gen. An.* ii. 1, 732, b, 28: *ζῳοτοκεῖ μὲν τὰ τελεώτερα τὴν φύσιν τῶν ζῴων καὶ μετέχοντα καθαρωτέρας ἀρχῆς· οὐθὲν γὰρ ζῳοτοκεῖ ἐν αὑτῷ, μὴ δεχόμενον τὸ πνεῦμα καὶ ἀναπνέον. τελεώτερα δὲ τὰ θερμότερα τὴν φύσιν καὶ ὑγρότερα καὶ μὴ γεώδη· τῆς δὲ θερμότητος τῆς φυσικῆς ὅρος ὁ πλεύμων ὅσων ἔναιμός ἐστιν . . . ὥσπερ δὲ τὸ ζῷον τέλεον, ὁ δὲ σκώληξ καὶ τὸ ᾠὸν ἀτελές, οὕτως τὸ τέλειον ἐκ τοῦ τελειοτέρου γίνεσθαι πέφυκεν.* Warmth and moisture are favourable, cold and dryness hostile to perfect development; Aristotle tries to show, 733, a, 3 sqq., how the various methods of production depend upon the various ways in which these are distributed and combined.

[2] *Ibid.* 733, a, 32: *δεῖ δὲ νοῆσαι ὡς εὖ καὶ ἐφεξῆς τὴν γένεσιν ἀποδίδωσιν ἡ φύσις. τὰ μὲν γὰρ τελεώτερα καὶ θερμότερα τῶν ζῴων*

the different tribes: it is only the more perfect which possess all the five senses, while the others partake of them in more or less completeness.[1] Again, there are only a few animals in which memory and imagination are developed from sensation; and accordingly they differ widely in intelligence and docility.[2] In the last place, Aristotle turns his attention to the habits and character of animals, and is at pains to point out the characteristics which establish a closer or more distant resemblance between the life of men and brutes,[3] noticing especially, for instance, how in the sexual life of animals and their treatment of their young we have all stages, from a merely vegetable indifference up to a species of moral conduct towards offspring.[4]

Aristotle failed to combine these different points of view in such a way as to establish a complete and graduated classification of the whole animal kingdom: nor, indeed, did he succeed in avoiding constant errors and contradictions in his treatment of this subject, owing to the complicated and crossing principles of

τέλειον ἀποδίδωσι τὸ τέκνον κατὰ τὸ ποιὸν [i.e. with perfectly developed organs] . . . . καὶ γεννᾷ δὴ ταῦτα ζῷα ἐν αὑτοῖς εὐθύς. τὰ δὲ δεύτερα ἐν αὑτοῖς μὲν οὐ γεννᾷ τέλεια εὐθὺς (ζῳοτοκεῖ δὲ ᾠοτοκήσαντα πρῶτον), θύραζε δὲ ζῳοτοκεῖ. τὰ δὲ ζῷον μὲν οὐ τέλειον γεννᾷ, ᾠὸν δὲ γεννᾷ καὶ τοῦτο τέλειον τὸ ᾠόν. τὰ δ' ἔτι τούτων ψυχροτέραν ἔχοντα τὴν φύσιν ᾠὸν μὲν γεννᾷ οὐ τέλειον δὲ ᾠόν, ἀλλ' ἔξω τελειοῦται, καθάπερ τὸ τῶν λεπιδωτῶν ἰχθύων γένος καὶ τὰ μαλακόστρακα καὶ τὰ μαλάκια. τὸ δὲ πέμπτον γένος καὶ ψυχρότατον οὐδ' ᾠοτοκεῖ ἐξ αὑτοῦ, ἀλλὰ καὶ τοῦ [τὸ] τοιοῦτον ἔξω συμβαίνει πάθος αὐτῷ, ὥσπερ εἴρηται· τὰ γὰρ ἔντομα σκωληκοτοκεῖ τὸ πρῶτον· προελθὼν δ' ᾠώδης γίνεται ὁ σκώληξ (ἡ γὰρ χρυσαλλὶς καλουμένη δύναμιν ᾠοῦ ἔχει). εἶτ' ἐκ τούτου γίνεται ζῷον ἐν τῇ τρίτῃ μεταβολῇ λαβὸν τὸ τῆς γενέσεως τέλος.

[1] *Hist. An.* iv. 8; *De An.* ii. 2, 415, a, 3; *De Somno*, 2, 455, a, 5, and p. 64, *supra*.

[2] See the passages referred to *supra*, p. 70, n. 4, and p. 38, n. 1.

[3] See p. 38, n. 1, *supra*.

[4] *Hist. An.* viii. 1, 588, b, 28, cf. *Oecon.* i. 3, 1343, b, 13.

division which he followed.[1] He generally divides the brute creation into nine departments, between which some transitional forms intervene: these are viviparous quadrupeds, oviparous quadrupeds, birds, fishes, whales, molluscs, malacostraca, testacea, and insects.[2] Close to the oviparous quadrupeds are placed the snakes, although in several points they resemble fishes.[3] A more general law of classification is his opposition between sanguineous and bloodless animals. To the former belong the first five classes of those we have enumerated; to the latter, the remaining four.[4] But though this opposition has so broad an application,[5] and though Aristotle uses it as an essential distinction,[6] he does not divide the whole animal kingdom into the two classes of sanguineous and bloodless, and then subdivide these into species as viviparous, &c.[7] His other systems of classi-

[1] With the following account cf. MEYER, *Arist. Thierk.* 485 sqq.

[2] *Hist. An.* i. 6, ii. 15 *init.* iv. 1 *init.*, *Part. An.* iv. 5 *init.*, among other passages. Cf. MEYER, *ibid.* 102 sqq. 151 sqq., *ibid.* 71 sqq., but especially 84 sqq., upon Aristotle's objections to dichotomy and to other artificial classifications.

[3] See, on the one hand, *Part. An.* iv. 1 *init.*, *Hist. An.* ii. 17, 508, a, 8, among other passages, and, on the other, *Hist. An.* iii. 7, 516, b, 20, *ibid.* c. 1, 509, b, 15, v. 5, 540, b, 30; *Gen. An.* i. 3, 716, b, 16; *Part.* iv. 13, 697, a, 9. MEYER, *ibid.* 154 sq.

[4] See the passages cited, p. 80, n. 2, *supra.*

[5] See p. 80, *supra.*

[6] *Hist. An.* ii. 15, 505, b, 26: *τούτῳ γὰρ διαφέρει τὰ μέγιστα γένη πρὸς τὰ λοιπὰ τῶν ἄλλων ζῴων, τῷ τὰ μὲν ἔναιμα τὰ δ' ἄναιμα εἶναι.* *Part.* iv. 3, 678, a, 33: *ὅτι γάρ ἐστι τὰ μὲν ἔναιμα τὰ δ' ἄναιμα ἐν τῷ λόγῳ ἐνυπάρξει τῷ ὁρίζοντι τὴν οὐσίαν αὐτῶν.* Cf. BRANDIS, ii. b, 1294 sq.

[7] Cf. MEYER, *ibid.* 138 sq. In *Part. An.* i. 2 sq. Aristotle sets forth in detail the reasons why he regards it as inadmissible to base his classification upon such a division (see i. 241, n. 3, *supra*, and cf. i. 271, n. 2, *sup.*), expressly stating, 642, b, 30: *χαλεπὸν μὲν οὖν διαλαβεῖν καὶ εἰς τοιαύτας διαφορὰς ὧν ἔστιν εἴδη ὥσθ' ὁτιοῦν ζῷον ἐν ταύταις ὑπάρχειν καὶ μὴ ἐν πλείοσι ταὐτόν . . . πάντων δὲ χαλεπώτατον ἢ ἀδύνατον εἰς τὰ ἄναιμα* (no other word could have been used consistently with the context which follows). This characteristic is

fication are employed with even less rigour, as when he speaks of land- and water-animals,[1] of viviparous, oviparous, and vermiparous,[2] of locomotive and non-locomotive,[3] of two-footed, four-footed, many-footed, and footless,[4] of walking, flying, swimming creatures,[5] of carnivora and herbivora, and so on.[6] Nor does Aristotle, in tracing the subordinate species into which the *summa genera* are divided, make use of these distinctions for the purpose of classification. He rather tries to find the natural divisions by observation,[7] and if he cannot succeed in marking off the species by these means, he does not hesitate to assume intermediate races belonging partly to the one sort and partly to the other.[8] Lastly,

unsuitable for the *differentia* of a *summa species*, if for no other reason than because it is a negative one, and negative conceptions cannot be further subdivided according to any inlying principle of classification (642, b, 21, 643, a, 1 sqq. b, 9-26).

[1] *Hist. An.* i. 487, a, 34, viii. 2 *init.* ix. 48, 631, a, 21, ii. 2, 648, a, 25, among other passages; cf. *Part.* i. 2, 642, b, 10 sqq.; *Top.* vi. 6, 144, b, 32 sqq.; MEYER, 84 sq. 140. See also p. 79, n. 2, *supra*.

[2] *Hist. An.* i. 5, 489, a, 34, among other passages; see MEYER, 97 sq. 141 sq., and p. 82 sq. *supra*, according to which as a fourth class we should have self-generated animals.

[3] *Ingr. An.* 4. 705, b, 13; *Part. An.* iv. 5, 681, b, 33 sqq. c. 7 *init.*

[4] *Hist. An.* i. 4, 489, b, 19; *Part. An.* iv. 10, 687, a, 2, 689, b, 31 sqq.; *Ingr. An.* 1, 704, a, 12. c. 5, 706, a, 26 sqq., b, 3 sqq.

[5] Νευστικὰ and πτηνὰ are represented, *Hist. An.* i. 5, 489, b, 23, 490, a, 5, as separate classes, the latter being subdivided into πτερωτὰ, πτιλωτὰ and δερμόπτερα; opposed to these we have as a third class all those which move upon the earth.

[6] *Hist. An.* i. 1, 488, a, 14, viii. 3, 592, a, 29, b, 15, 28; *Polit.* i. 8, 1256, a, 24, among other passages; *v.* MEYER, p. 100.

[7] MEYER, *ibid.* p. 158–329, gives an exhaustive account of these.

[8] Such transitional forms are: the monkey standing between man and viviparous quadrupeds; the bat between flying and walking animals, but properly with as much claim to be reckoned among viviparous quadrupeds as the seal, which is assigned a place between land- and water- animals; the ostrich, which, although a bird, in many points resembles a quadruped; the crocodile, which is an oviparous quadruped approximating to a

though it cannot be denied that Aristotle's system represents a gradual progression toward completeness in the animal creation which attains its summit in man,[1] yet the respective dignities of whole classes are left undetermined, and the different points of view from which he judges them intersect each other so awkwardly that the same class often ranks higher in one respect and lower in another. Zoophytes, generally speaking, are less perfect than true animals; shell-fish are less perfect than locomotive creatures, the footless than those which are provided with feet, the vermiparous than the oviparous, and these than the viviparous; all animals than man.[2] But whether insects rank above molluscs and malacostraca, birds above amphibious animals, fishes above snakes, or *vice versa*, Aristotle does not enable us to decide. We may even doubt[3] about the respective positions of shell-fish and insects. Again, though sanguineous animals are the nobler on account of their greater vital warmth and their more complex organisation, still some insects, like bees and ants, are superior to many of them in intelligence and art.[4] If birds as oviparous animals rank below mammals, their posture approximates them to man;[5] it seems strange, therefore, that they should be more remote from mankind in

fish; serpents (see p. 86, n. 8, *supra*); among bloodless animals the nautilus and the hermit crab are molluscs which are related to crustacea. See the references given by MEYER, pp. 146–158. The zoological position of man is discussed *infra*, p. 90, n. 1.

[1] See p. 25 sqq. *supra*; p. 28, n. 3, among other passages.

[2] See i. 487 sq. *supra*.

[3] As MEYER, p. 486, shows.

[4] *Part. An.* ii. 2, 648, a, 4 sqq.; see p. 39, n. 6, *supra*, where a solution of the difficulty is suggested, which, however, is hardly an adequate one.

[5] *Ingr. An.* 5, 706, a, 25, b, 3; *Hist. An.* i. 5, 489, b, 20.

mode of birth and physical structure than the mammals.[1] When we take the spontaneous generation of sexless animals as a sign of a low rank, intermediate between the vegetable and animal worlds, we are surprised to find the same mode of propagation not only in insects but even in fishes.[2] On the other hand, since viviparous animals are the most perfect,[3] whales and dolphins, as well as skates and vipers, take precedence of birds and amphibious animals, though inferior to them in many respects.[4] If we explain the transition from quadrupeds to multipeds, and from these to footless creatures by a continual declension of warmth,[5] the bloodless insects ought to be warmer than the sanguineous snakes, fishes, and dolphins.[6] It cannot be denied that the complex variety of the facts cannot always be harmonised with the presuppositions of the system, and that it is impossible to avoid disproportion and even contradictions in its application. The majority of these defects appear to have escaped Aristotle's notice; others he tries to avoid by artificial means:[7] but he never allows himself to be shaken in his great conviction that organic nature presents a graduated scale of progressive development towards perfection.

[1] Since an upright posture is said to accompany greater vital heat; see p. 81 sq. *supra*.

[2] See p. 82 sq. *sup.*, cf. p. 48 sq.

[3] *Gen. An.* ii. 4, 737, b, 26. Cf. p. 83, n. 2, *supra*.

[4] In the case of cartilaginous fish and vipers this requires no proof; in the case of cetaceans their want of feet at least, and as compared with birds the position of their heads, are in Aristotle's view important defects.

[5] See p. 81, *supra*.

[6] Cf. MEYER, p. 487 sq. where further examples are given.

[7] See also *Gen. An.* i. 10 sq. where the viviparousness of sharks is explained on the ground of their natural coldness, whereas the same property in mammals is made to depend upon their greater heat and perfection; cf. *Part. An.* iii. 6, 669, a, 24 sqq.; *Gen. An.* ii. 4, 737, b, 26, and other passages.

# CHAPTER XI

## CONTINUATION

### *Man*

The end of this evolution is Man. His body unites him with the lower animals, and especially with the class of viviparous land-animals.[1] But already even in

[1] It might be doubted whether man is classed by Aristotle with viviparous quadrupeds or placed in a class by himself. Thus, *Hist. An.* i. 6, 490, b, 15 sqq., those γένη which have no subordinate species under them are compared to the genus ἄνθρωπος; on the other hand, *ibid.* ii. 8 *init.*, man is opposed to the τετράποδα, and the monkey is described as an intermediate form between them. This apparent contradiction is due to the fact that Aristotle has no name for the whole class: as a biped, man cannot be classed along with τετράποδα ζῳοτοκοῦντα; on the other hand, ζῳοτοκοῦντα would embrace the whole which he declares to be a separate γένος. In reality man is treated as a species of the same genus to which viviparous quadrupeds belong. This is unmistakably the intention in *Hist. An.* i. 6, 490, b, 31 sqq., where he is described along with the lion, the stag, &c., as an εἶδος τοῦ γένους τοῦ τῶν τετραπόδων ζῴων καὶ ζῳοτόκων, and as one which has no subordinate species under it; *Part.* i. 5, 645, b, 24, where ὄρνις is adduced as an example of a γένος, ἄνθρωπος of an εἶδος; *Hist. An.* ii. 15, 505, b, 28, where the first class of sanguineous animals is described comprehensively as ἄνθρωπός τε καὶ τὰ ζῳοτόκα τῶν τετραπόδων; *ibid.* vi. 18 *init.*: περὶ μὲν οὖν τῶν ἄλλων ζῴων . . . σχεδὸν εἴρηται περὶ πάντων . . . περὶ δὲ τῶν πεζῶν ὅσα ζῳοτοκεῖ καὶ περὶ ἀνθρώπου λεκτέον τὰ συμβαίνοντα. *Gen. An.* i. 8, 738, a, 37: οὔτε γὰρ τὰ ζῳοτοκοῦντα ὁμοίως ἔχει πάντα [sc. τὰς ὑστέρας], ἀλλ' ἄνθρωποι μὲν καὶ τὰ πεζὰ πάντα κάτω . . . τὰ δὲ σελάχη ζῳοτοκοῦντα ἄνω. *Ibid.* ii. 4, 737, b, 26: τὰ ζῳοτοκοῦντα καὶ τούτων ἄνθρωπος. A certain distinction between man and other viviparous land-animals is doubtless referred to in these and other passages (e.g. *Part. An.* ii. 17, 660, a, 17), but Aristotle does not seem to have re-

the characteristics of his physical organism we have evidences of something higher, which raises him far above the lower animals. His body is of a warmer temperature than theirs. He has therefore more blood in proportion and a larger brain.[1] In him alone, as the greater heat and nobility of his nature demands, we have true symmetry of form and the upright posture which corresponds with it.[2] In man the distinction between the right and the left is most fully developed.[3] As his blood is the purest,[4] his sensibility is most delicate, his powers of perception the most refined, and his understanding the keenest.[5] His mouth, his windpipe, his lips, and his tongue add to their other functions that of speech, which marks him out from all living things.[6] Nature has not confined man, as she has the other animals, to one means of defence. His means of self-preservation are infinite, and can be adapted to suit his changing needs.[7] His hand is the tool of all

garded it as sufficiently fundamental to constitute man a separate γένος.

[1] *Part. An.* ii. 7, 653, a, 27–37, iii. 6, 669, b, 4, iv. 10 (see p. 81, n. 8, *supra*); *Respir.* 13, 477, a, 20. Upon this depends also length of life (in which respect man is held to be excelled only by the elephant) in so far as this depends in turn upon the correspondence between the composition of the body and the surrounding atmosphere, and especially upon the heat of its upper portions; *Gen. An.* iv. 10, 777, b, 3 sqq.; *Longit. Vit.* c. 5, 6, 466, a, 30 sqq. b, 14, 467, a, 31.

[2] Besides the passages already referred to, cf. *Ingr. An.* 5, 706, b, 3, 9, c. 11, 710, b, 5–17; *De Vita*, 1, 468, a, 5, and i. 467, n. 3, *supra*.

[3] *Ingr. An.* 4, 706, a, 18; see p. 81, n. 6, *supra*.

[4] *Respir.* 13, 477, a, 20.

[5] See p. 64, n. 6, and p. 11, n. 4, *supra*.

[6] *Part.* ii. 16, 659, a, 30 sqq. c. 17, 660, a, 17 sqq. iii. 1, 662, a, 20, 25; *Gen.* v. 7, 786, b, 19; *Hist. An.* iv. 9, 536, a, 32.

[7] *Part. An.* iv. 10, 687, a, 23, in the celebrated passage upon the human hand, after the words quoted, p. 11, n. 2, *supra*, Aristotle says: *ἀλλ' οἱ λέγοντες ὡς συνέστηκεν οὐ καλῶς ὁ ἄνθρωπος ἀλλὰ χείριστα τῶν ζῴων* [because he is naked and defenceless; Aristotle has

tools, so ingeniously contrived for the most widely different purposes that it takes the place of every other.[1] In a word, man is the first and most perfect of all living creatures.[2] And for this reason, just as each less perfect thing finds its end in that which is more perfect,[3] so all lower forms of animal life are destined for the use of man.[4]

It is in the soul of man, however, that this perfection has its proper seat. Even his physical superiority has only been vouchsafed to him because his body has to serve as the instrument of a nobler soul.[5] While the other animals are confined to the lower operations of the nutritive and sensitive life, man rises above them all by virtue of his faculty of thought.[6] Nutrition,

probably in view PLATO'S *Protagoras*, 21, C] οὐκ ὀρθῶς λέγουσιν. τὰ μὲν γὰρ ἄλλα μίαν ἔχει βοήθειαν, καὶ μεταβάλλεσθαι ἀντὶ ταύτης ἑτέραν οὐκ ἔστιν, ἀλλ' ἀναγκαῖον ὥσπερ ὑποδεδεμένον ἀεὶ καθεύδειν καὶ πάντα πράττειν, καὶ τὴν περὶ τὸ σῶμα ἀλεώραν μηδέποτε καταθέσθαι, μηδέ μεταβάλλεσθαι ὃ δὴ ἐτύγχανεν ὅπλον ἔχων. τῷ δὲ ἀνθρώπῳ τάς τε βοηθείας πολλὰς ἔχειν καὶ ταύτας ἀεὶ ἔξεστι μεταβάλλειν, ἔτι δ' ὅπλον οἷον ἂν βούληται καὶ ὅπου ἂν βούληται ἔχειν.

[1] See the further account in the passage just quoted, and p. 19, n. 1; also *De An.* iii. 8, 432, a, 1, where the hand is called ὄργανον ὀργάνων.

[2] *Hist. An.* ix. 1, 608, b, 5: the ethical characteristics of the sexes are more prominent ἐν τοῖς ἔχουσι μᾶλλον ἦθος καὶ μάλιστα ἐν ἀνθρώπῳ· τοῦτο [sc. τὸ ζῷον] γὰρ ἔχει τὴν φυσιν ἀποτετελεσμένην. *Gen. An.* ii. 4, 737, b, 26: ἔστι δὲ τὰ τέλεια ζῷα πρῶτα, τοιαῦτα δὲ τὰ ζῳοτοκοῦντα, καὶ τούτων ἄνθρωπος πρῶτον.

[3] Cf. p. 28.

[4] *Polit.* i. 8, 1256, b, 15: Nature has provided that every creature should meet with its necessary food when it comes into the world; ὥστε ὁμοίως δῆλον ὅτι καὶ γενομένοις οἰητέον τά τε φυτὰ τῶν ζῴων ἕνεκεν εἶναι καὶ τἆλλα ζῷα τῶν ἀνθρώπων χάριν, τὰ μὲν ἥμερα καὶ διὰ τὴν χρῆσιν καὶ διὰ τὴν τροφὴν, τῶν δ' ἀγρίων, εἰ μὴ πάντα, ἀλλὰ τά γε πλεῖστα τῆς τροφῆς καὶ ἄλλης βοηθείας ἕνεκεν, ἵνα καὶ ἐσθὴς καὶ ἄλλα ὄργανα γίνηται ἐξ αὐτῶν. εἰ οὖν ἡ φύσις μηθὲν μήτε ἀτελὲς [without reason] ποιεῖ μήτε μάτην, ἀναγκαῖον τῶν ἀνθρώπων ἕνεκεν αὐτὰ πάντα πεποιηκέναι τὴν φύσιν.

[5] See p. 10 sq. *supra*.

[6] See p. 22 sq. *supra*.

propagation, the alternations of sleep and waking, birth, old age, death, sense-perception, even imagination and memory, are common to man and beast alike;[1] nor do these phenomena as they exhibit themselves in each differ essentially from one another.[2] And the same is true of the feelings of pleasure and displeasure and the desires that spring from them.[3] That which belongs to man alone of all known creatures is Mind or Reason (Νοῦς).[4] By 'Nous' Aristotle means the power of Thought in its widest acceptation,[5] but also more specifically the faculty of thought in so far as it deals with supersensible reality,[6] and especially the faculty of

[1] Voluntary recollection alone is beyond their power; cf. p. 73 sq.

[2] On these points, therefore, we have simply to refer to the previous chapter.

[3] See p. 22, n. 1, *supra*.

[4] Aristotle, like Plato, distinguishes for this reason between the rational and the irrational part of the soul; *Eth.* i. 13, 1102, a, 26 sqq.; *Polit.* vii. 15, 1334, b, 17, and *passim*.

[5] *De An.* iii. 4, 429, a, 23: λέγω δὲ νοῦν ᾧ διανοεῖται καὶ ὑπολαμβάνει ἡ ψυχή.

[6] After explaining, *De An.* iii. 4, 429, b, 10 sq., the distinction between the concrete thing with its ingredient of matter and the pure unadulterated form, Aristotle continues, l. 12: τὸ σαρκὶ εἶναι καὶ σάρκα ἢ ἄλλῳ ἢ ἄλλως ἔχοντι κρίνει . . . τῷ μὲν οὖν αἰσθητικῷ τὸ θερμὸν καὶ τὸ ψυχρὸν κρίνει καὶ ὧν λόγος τις ἡ σάρξ· ἄλλῳ δὲ ἤτοι χωριστῷ, ἢ ὡς ἡ κεκλασμένη ἔχει πρὸς αὑτὴν ὅταν ἐκταθῇ, τὸ σαρκὶ εἶναι [the pure conception of the σάρξ] κρίνει. The same is true of all abstract conceptions: ἑτέρῳ ἄρα ἢ ἑτέρως ἔχοντι κρίνει. καὶ ὅλως ἄρα ὡς χωριστὰ τὰ πράγματα τῆς ὕλης, οὕτω καὶ τὰ περὶ τὸν νοῦν. The subject of κρίνει is νοῦς, as is shown by the preceding context. It may, indeed, seem strange that it is said of it that it knows (for we must give this more general signification to κρίνειν here, as in *De An.* iii. 3, 428, a, 2) heat and cold and the sensible qualities of things in general τῷ αἰσθητικῷ (where not only is it not necessary on account of the context to read αἰσθητῷ with BRENTANO, *Psychol. d. Ar.* 134, but it is not admissible). But while the simple perception of the data of sense belongs to αἴσθησις, and not to νοῦς, yet every judgment relating to them is shared in by thought (νοῦς in the wider sense) (cf. i. 209, n. 3, and 211, n. 1, *sup.*), and to this extent reason also may be described as that which by means of the perceptive faculty knows sensible things. Conceptions, on the other hand, as such, universal thoughts limited to no individual experi-

grasping in an immediate act of consciousness that which cannot be the object of mediated knowledge.[1] This part of the soul cannot be entangled in the life of the body. It must be simple, changeless, impassible.[2]

ence are known by reason *per se*, although the material for them is supplied by sense-perception (as in the case of the conception of σάρξ). Instead of saying this simply, Aristotle expresses himself in such a way as to leave it ambiguous whether these are recognised by a faculty different from that by which sensible objects are recognised or by the same faculty acting in a different way. If we had here a dilemma between the two terms of which we had to decide, we could only say, as Aristotle does, that they are known ἄλλῳ (νοῦς being another faculty) than by τὸ αἰσθητικόν. But the statement of *three* alternatives, if nothing else, shows that Aristotle regards each of the first two descriptions as admissible in a certain sense. The Nous knows insensible things by a faculty different from that by which it knows sensible objects, and, indeed, different in essence and actual reality (χωριστὸν) from the faculty of sense-perception, seeing that it knows them by itself alone; but in so far as it is also true that the reason knows sensible things, we may say that it knows insensible things by a different method; it knows the former directly, the latter only indirectly by means of the judgment it passes upon the data of sense. This is the meaning of the words ἢ ὡς ἡ κεκλασμένη &c., the further explanation of which is of minor importance in connection with the essential meaning of the passage, since this would be the same even although we take the illustration of the broken and extended line as merely explanatory of ἄλλως ἔχειν.

[1] To this faculty belong first and chiefly the highest principles of thought, the ἄμεσα; cf. i. 197, n. 4, *supra*. In this way (according to i. 197, n. 3, *sup*., cf. the citation from *Metaph*. xii. 7, i. 203, n. 3, *sup*.) Nous knows itself by an immediate intuition, as thinker and thought here coincide. Whether the thought of God and other metaphysical conceptions are also the objects of immediate cognition, Aristotle, as already observed, i. 204, does not say.

[2] *De An*. iii. 4, 429, a, 18 (on what precedes see i. 199, n. 2, *sup*.): ἀνάγκη ἄρα, ἐπεὶ πάντα νοεῖ, ἀμιγῆ εἶναι, ὥσπερ φησὶν Ἀναξαγόρας [see ZELL. *Ph. d. Gr*. i. 886, 1] ἵνα κρατῇ, τοῦτο δ' ἐστὶν ἵνα γνωρίζῃ · παρεμφαινόμενον γὰρ κωλύει τὸ ἀλλότριον καὶ ἀντιφράττει, ὥστε μηδ' αὐτοῦ εἶναι φύσιν μηδεμίαν ἀλλ' ἢ ταύτην, ὅτι δυνατόν. ὁ ἄρα καλούμενος τῆς ψυχῆς νοῦς . . . . οὐθέν ἐστιν ἐνεργείᾳ τῶν ὄντων πρὶν νοεῖν. διὸ οὐδὲ μεμῖχθαι εὔλογον αὐτὸν τῷ σώματι. ποιός τις γὰρ ἂν γίγνοιτο, ψυχρὸς ἢ θερμὸς [it would in this case partake of the properties of the body and as it would thus bring with it definite qualities to the cognition of νοητά, it could not exhibit that ἀπάθεια—see i. 199, n. 2, *supra*—and purity from

Just as it has for its object pure form abstracted from all matter, so is it itself free and unfettered by the body.[1] It has no bodily organ like the senses;[2] it is not born into existence like the other parts of the

admixture which it requires for the exercise of its universal faculty of thought: an explanation which seems to harmonise better with the meaning of διὸ &c. than that of BRENTANO, *ibid.* 120 sqq.], ἢ κἂν ὄργανόν τι εἴη, ὥσπερ τῷ αἰσθητικῷ· νῦν δ' οὐθέν ἐστιν: b, 22. ἀπορήσειε δ' ἄν τις, εἰ ὁ νοῦς ἁπλοῦν ἐστι καὶ ἀπαθὲς [HAYDUCK, *Observat. crit. in loc. al. Arist.* p. 3, not without reason regards these words as strange, inasmuch as it hardly requires to be explained, as is done l. 25 sqq., that τὸ ἀπαθὲς is not subject to πάσχειν; he would therefore strike them out; we might prefer instead of ἀπαθὲς to read 'ἀμιγὲς'—see 429, a, 18 quoted above] καὶ μηθενὶ μηθὲν ἔχει κοινὸν, . . . πῶς νοήσει, εἰ τὸ νοεῖν πάσχειν τί ἐστιν. This independence of the reason explains the remark which is added, *De An.* ii. 1, 413, a, 4 sqq. to the definition of the soul as the entelechy of its body: it follows that the soul (or at any rate certain parts of it, if it has parts) is not separate (χωριστὸς) from the body: οὐ μὴν ἀλλ' ἔνιά γε οὐθὲν κωλύει (see p. 6, n. 1, *supra*). Cf. further n. 3 below, p. 96, n. 2, *infra*, and the passages referred to below bearing upon νοῦς ποιητικὸς; also *De An.* i. 3, 407, a, 33: ἡ νόησις ἔοικεν ἠρεμήσει τινὶ καὶ ἐπιστάσει μᾶλλον ἢ κινήσει. *Phys.* vii. 3, 247, b, 1: οὐδ' αἱ τοῦ νοητικοῦ μέρους ἕξεις ἀλλοιώσεις. *Ibid.* 247, a, 28: ἀλλὰ μὴν οὐδὲ τῷ διανοητικῷ μέρει τῆς ψυχῆς ἡ ἀλλοίωσις &c.; nor is λῆψις ἐπιστήμης a γένεσις or ἀλλοίωσις, but rather an ἠρεμία καὶ κατάστασις ταραχῆς—the removal of obstructions which hinder the reason in the exercise of its functions, resembling the awakening from sleep.

[1] See p 93, n. 6, *sup.* Χωριστὸς is often applied to Nous, the lower faculties of the soul being ἀχώριστοι; cf. preced. and foll. n. p. 96, n. 1, *infra.* *De An.* ii. 2, 413, b, 24: περὶ δὲ τοῦ νοῦ καὶ τῆς θεωρητικῆς δυνάμεως οὐδέν πω φανερὸν, ἀλλ' ἔοικε ψυχῆς γένος ἕτερον εἶναι, καὶ τοῦτο μόνου ἐνδέχεται χωρίζεσθαι [sc. τοῦ σώματος], καθάπερ τὸ ἀΐδιον τοῦ φθαρτοῦ.

[2] See preced. and foll. n. and the further statement *De An.* iii. 4, 429, a, 29: ὅτι δ' οὐχ ὁμοία ἡ ἀπάθεια τοῦ αἰσθητικοῦ καὶ τοῦ νοητικοῦ, φανερὸν ἐπὶ τῶν αἰσθητηρίων καὶ τῆς αἰσθήσεως. ἡ μὲν γὰρ αἴσθησις οὐ δύναται αἰσθάνεσθαι ἐκ τοῦ σφόδρα αἰσθητοῦ . . . ἀλλ' ὁ νοῦς ὅταν τι νοήσῃ σφόδρα νοητὸν, οὐχ ἧττον νοεῖ τὰ ὑποδεέστερα, ἀλλὰ καὶ μᾶλλον· τὸ μὲν γὰρ αἰσθητικὸν οὐκ ἄνευ σώματος, ὁ δὲ χωριστός. In view of these definite declarations, the attempt (KAMPE, *Erkenntnissth. d. Ar.* 12–49) to attribute to the Nous a material substratum consisting of æther must appear at the outset a profitless one. Not even the passage quoted p. 6, n. 2, from *Gen. An.* ii. 3 can be adduced in support of it, for even there the σπέρμα of the

soul;[1] nor is it affected by the death of the body.[2] It is real, therefore, only in the act of thinking; apart

*ψυχικὴ ἀρχή*, so far as it refers to the Nous, is described as *χωριστὸν σώματος* and even although it is said that it enters the womb with the *γονή*, it does not follow from this that it is united to this or any other material substratum: the Nous is said, indeed, to be in the body during life, but not to be mixed up with it or entangled in its life; the *γονή* itself it enters from without; cf. p. 100, *infra*. Furthermore, even although the æther like the Nous is called divine and unchangeable, the essential distinction between them (the one is a body, the other is not) is not thereby abolished, for it has already been shown, i. 476, that we have nothing to do with any 'immaterial matter'; and when KAMPE, p. 32, 39, argues in support of his view that the stars, which are made of æther, are intelligent beings, he forgets that it is not the stars themselves that are so, but the spirits by whom they and their spheres are moved. Although, lastly, the Nous is said, *Eth.* x. 7, 1177, b, 34, as compared with the multiplicity of the other faculties of the soul, to be 'of small compass (*τῷ ὄγκῳ μικρὸν*) but pre-eminent in power and value,' we cannot fairly conclude from this metaphorical expression that it is held by Aristotle to be united to a body.

[1] *Gen. An.* ii. 3, 736, a, 31, Aristotle asks: *πότερον ἐνυπάρχει [ἡ ψυχὴ] τῷ σπέρματι καὶ τῷ κυήματι ἢ οὔ, καὶ πόθεν*; to which he replies (b, 8): *τὴν μὲν οὖν θρεπτικὴν ψυχὴν τὰ σπέρματα καὶ τὰ κυήματα τὰ χωριστὰ δῆλον ὅτι δυνάμει μὲν ἔχοντα θετέον, ἐνεργείᾳ δ' οὐκ ἔχοντα, πρὶν ἢ καθάπερ τὰ χωριζόμενα τῶν κυημάτων ἕλκει τὴν τροφὴν καὶ ποιεῖ τὸ τῆς τοιαύτης ψυχῆς ἔργον.* With regard to the *ψυχὴ αἰσθητικὴ* and *νοητικὴ* he then shows that either all their parts must come into being for the first time at the moment of birth or must all have pre-existed, or else that some of them do the one, some the other, and continues: *ὅτι μὲν τοίνυν οὐχ οἷόν τε πάσας προϋπάρχειν φανερόν ἐστιν ἐκ τῶν τοιούτων. ὅσων γάρ ἐστιν ἀρχῶν ἡ ἐνέργεια σωματική, δῆλον ὅτι ταύτας ἄνευ σώματος ἀδύνατον ὑπάρχειν, οἷον βαδίζειν ἄνευ ποδῶν· ὥστε καὶ θύραθεν εἰσιέναι ἀδύνατον. οὔτε γὰρ αὐτὰς καθ' αὑτὰς εἰσιέναι οἷόν τε ἀχωρίστους οὔσας, οὔτ' ἐν σώματι εἰσιέναι· τὸ γὰρ σπέρμα περίττωμα μεταβαλλούσης τῆς τροφῆς ἐστὶν* [and therefore not something coming from without]. *λείπεται δὲ [δὴ] τὸν νοῦν μόνον θύραθεν ἐπεισιέναι καὶ θεῖον εἶναι μόνον· οὐθὲν γὰρ αὐτοῦ τῇ ἐνεργείᾳ κοινωνεῖ σωματικὴ ἐνέργεια.* 737, a, 7: *τὸ δὲ τῆς γονῆς* &c. see p. 6, n. 2, *sup.* *De An.* i. 4; see foll. n. For further discussion of the question of the entrance of reason into the body, see p. 80, *supra*.

[2] *De An.* i. 4, 408, b, 18: *ὁ δὲ νοῦς ἔοικεν ἐγγίνεσθαι οὐσία τις οὖσα καὶ οὐ φθείρεσθαι. μάλιστα γὰρ ἐφθείρετ' ἂν ὑπὸ τῆς ἐν τῷ γήρᾳ ἀμαυρώσεως, νῦν δ' ἴσως ὅπερ ἐπὶ τῶν αἰσθητηρίων συμβαίνει· εἰ γὰρ λάβοι ὁ πρεσβύτης ὄμμα τοιονδί, βλέποι ἂν ὥσπερ καὶ ὁ νέος. ὥστε τὸ γῆρας οὐ τῷ τὴν ψυχήν τι πεπον-*

from this it is the mere potentiality of thought.[1] And since actual thought in the sphere of nature precedes the mere potentiality to think, while in the sphere of the human mind potentiality necessarily precedes actuality,[2] Aristotle distinguishes two kinds of Reason in man—the Actual and the Potential, the Active and the Passive:[3] that which produces everything, and that which becomes everything.[4] The former alone is separate and distinct from the body—impassible, eternal, immortal, absolutely pure and perfect Actuality. Pas-

θέναι, ἀλλ' ἐν ᾧ [= ἀλλὰ τῷ πεπονθέναι τι ἐκεῖνο ἐν ᾧ ἡ ψυχή ἐστιν], καθάπερ ἐν μέθαις καὶ νόσοις. καὶ τὸ νοεῖν δὴ καὶ τὸ θεωρεῖν μαραίνεται ἄλλου τινὸς ἔσω [inside the body] φθειρομένου, αὐτὸ δὲ ἀπαθές ἐστιν [the subject of ἀπαθὲς is τὸ νοοῦν, which corresponds to νοῦς above and is to be supplied from νοεῖν] . . . ὁ δὲ νοῦς ἴσως θειότερόν τι καὶ ἀπαθές ἐστιν. iii. 5, 430, a, 22 (see p. 98, n. 1, *infra*); *Metaph.* xii. 3, 1070, a, 24 sqq. (see Sec. on Immortality, *infra*).

[1] *De An.* iii. 4, 429, a, 21 sqq. b. 5 sqq. 30; see i. 199, n. 2, *supra*, where the meaning of this statement is further explained.

[2] See i. 199, n. 2, *supra*.

[3] Aristotle certainly speaks of νοῦς παθητικὸς (see p. 98, n. 1, *infra*); on the other hand, he nowhere uses the expression ποιητικὸς νοῦς (cf. BONITZ, *Ind. Ar.* 491, b, 2; WALTER, *Die Lehre v. d. prakt. Vern.* 278 sqq.), perhaps because he wished to avoid the ambiguity which might arise out of the opposition he elsewhere makes between ποιεῖν and πράττειν on the one hand, and θεωρεῖν on the other (see i. 182, n. 2, *supra*), if the νοῦς ποιητ. were taken to be the antithesis of νοῦς θεωρητικὸς (*De An* ii. 3, 415, a, 11, iii. 9, 432, b, 27, iii. 10, 433, a, 14), in the same sense as νοῦς πρακτικὸς (*De An.* iii. *ibid.*) must be. But as the νοῦς ποιητ. is called αἴτιον καὶ ποιητικὸν, as it is said πάντα ποιεῖν, and as ποιητικὸς is elsewhere constantly used as the antithesis of παθητικὸς (*Ind. Ar.* 555, b, 16 sqq.), we seem to be perfectly justified in speaking of the passive and the active reason, especially as this seems to be already a recognised mode of expression in ALEX. *De An.* 140 (cf. WALTER, 282).

[4] *De An.* iii. 5 *init.*: ἐπεὶ δ' ὥσπερ ἐν ἁπάσῃ τῇ φύσει ἐστί τι τὸ μὲν ὕλη ἑκάστῳ γένει (τοῦτο δὲ ὃ πάντα δυνάμει ἐκεῖνα), ἕτερον δὲ τὸ αἴτιον καὶ ποιητικόν, τῷ ποιεῖν πάντα, οἷον ἡ τέχνη πρὸς τὴν ὕλην πέπονθεν, ἀνάγκη καὶ ἐν τῇ ψυχῇ ὑπάρχειν ταύτας τὰς διαφοράς. καὶ ἔστιν ὁ μὲν τοιοῦτος νοῦς τῷ πάντα γίνεσθαι, ὁ δὲ τῷ πάντα ποιεῖν, ὡς ἕξις τις, οἷον τὸ φῶς· τρόπον γάρ τινα καὶ τὸ φῶς ποιεῖ τὰ δυνάμει ὄντα χρώματα ἐνεργείᾳ χρώματα.

sive Reason, on the other hand, is born and dies with the body, and is a partaker in its states.[1]

If we try, however, to reduce this account to a clear and consistent theory, we are met by many questions which Aristotle has left unanswered.

[1] *Ibid.* where Aristotle continues: *καὶ οὗτος ὁ νοῦς* [*ὁ ποιητικὸς*] *χωριστὸς καὶ ἀπαθὴς καὶ ἀμιγὴς τῇ οὐσίᾳ ὢν ἐνεργείᾳ* [or *ἐνέργεια*]. *ἀεὶ γὰρ τιμιώτερον τὸ ποιοῦν τοῦ πάσχοντος καὶ ἡ ἀρχὴ τῆς ὕλης. τὸ δ' αὐτό ἐστιν ἡ κατ' ἐνέργειαν ἐπιστήμη τῷ πράγματι·* [cf. i. 398, n. 3, *supra*] *ἡ δὲ κατὰ δύναμιν χρόνῳ προτέρα ἐν τῷ ἑνί, ὅλως δὲ οὐδὲ* [so TORSTR. reads instead of *οὐ*] *χρόνῳ· ἀλλ' οὐχ ὁτὲ μὲν νοεῖ ὁτὲ δ' οὐ νοεῖ. χωρισθεὶς δ' ἐστὶ μόνον τοῦθ' ὅπερ ἐστὶ* [apart from the body it is only what it is without admixture of any foreign ingredient], *καὶ τοῦτο μόνον ἀθάνατον καὶ ἀΐδιον. οὐ μνημονεύομεν δέ, ὅτι τοῦτο μὲν ἀπαθές, ὁ δὲ παθητικὸς νοῦς φθαρτὸς καὶ ἄνευ τούτου οὐθὲν νοεῖ.* The words at the beginning of this passage are interpreted by BRENTANO (*Psychol. d. Ar.* 175) and HERTLING (*Mat. u. Form,* 173) as meaning 'this Nous also is separate.' This is opposed, however, both to the grammar and to the sense of the passage; in the first place, the connection is thus broken between this sentence and the preceding (we should require at least *καὶ οὗτος δὲ ὁ νοῦς* &c.), and, secondly, not only is there nothing in the previous discussion about another kind of Nous which is also *χωριστὸς* and *ἀπαθής*, but Aristotle knows of none such, the *νοῦς παθητικός*, of which he has just been speaking, being of course not *ἀπαθής*, while the Nous that is spoken of, c. 4 (as will be shown p. 101, n. 2, *infra*), is itself the active Nous. The words: *τὸ δ' αὐτὸ ... χρόνῳ* that follow are repeated at the beginning of c. 7; but as they there awkwardly interrupt the connection, TORSTRIK, p. 199, is doubtless right in holding that they along with the rest of c. 7, § 1 (to *τετελεσμένον*, 431, a, 7) are out of place. On the other hand, TORSTRIK (p. 185) cannot be right in striking out the *οὐχ* in the words *ἀλλ' οὐχ ὁτὲ μὲν νοεῖ* &c. According to his reading no intelligible meaning can be attached to the remark that the Nous at one time thinks, at another it ceases to think; whereas it becomes quite intelligible if we suppose Aristotle to say: 'In the world as a whole merely potential knowledge does not precede actual knowledge even in the order of time (not to speak of that of being); it is not the case (in the world as a whole) that the Nous [this must in any case be supplied as the subject] at one time thinks, at another ceases to think.' (To make this sense more obvious a comma might be placed instead of a colon before *ἀλλ' οὐχ* &c.) Nor is this sense inconsistent with *μὴ ἀεὶ νοεῖν*, c. 4, 430, a, 5, as these words refer to thought in the individual, in which the passage before us also recognises the distinction between the potential and the actual, and therefore *τὸ μὴ ἀεὶ νοεῖν*.

In the first place, with regard to Active Reason, it might appear that this is not only the Divine in man,[1] but that it is identical with the Divine Spirit itself. For while it enters each man along with the germ of his physical and psychical nature as something individual, yet at the same time the terms in which it is described are such as apply only to the Universal Spirit. It is at least difficult to understand what is left of individuality when we have abstracted from it not only all corporeal life, but also all active evolution,[2] all passive states, and with these all memory and self-consciousness.[3] So far Alexander of Aphrodisias had excellent cause to seek for the Active Reason in the Divine Spirit rather than in a part of the human soul.[4] But this cannot be Aristotle's meaning. For the extramundane Divine Spirit cannot be identified with the indwelling principle of Reason which passes into the individual at birth and is a part of the human soul.[5] Yet how we are precisely to represent to ourselves this part of our soul, and what kind of reality we are to ascribe to it, it is difficult to say. Since it is said to enter the body from without,[6]

[1] See the passages cited, p. 96, n. 1 and 2, *supra*, and *Eth.* x. 7, 1177, a, 15: *εἴτε θεῖον ὂν καὶ αὐτὸ* [*ὁ νοῦς*] *εἴτε τῶν ἐν ἡμῖν θειότατον*. b, 30: *εἰ δὴ θεῖον ὁ νοῦς πρὸς τὸν ἄνθρωπον*.

[2] This can only be where there is a transition from the potential to the actual; in the active reason, on the other hand, there is nothing merely potential, for all is pure actuality.

[3] That even these belong to the sphere of the passive reason is expressly stated *De An.* iii. 5 (p. 97, n. 1), and proved in the sequel.

[4] Cf. *Part.* iii. a, 712, 4.

[5] The distinction between the active and the passive reason is said (and to this THEMIST. *De An.* 89, b, pp. 188 sq. Sp. and AMMON. *in* PHILOP. *De An.* Q, 3, o, also appeal) to reside *ἐν τῇ ψυχῇ* (see *ibid. supra*); of one *μόριον τῆς ψυχῆς* it is said, *De An.* iii. 4, 429, a, 10, 15, that it is *ἀπαθὲς*; the *νοῦς χωριστὸς* is called. *De An.* ii. 2, 413, b, 24, *ψυχῆς γένος ἕτερον* &c.

[6] See p. 96, n. 1, *supra*.

it must have existed previously. And this is evidently Aristotle's view.[1] Since, moreover, even after it has entered the body it stands aloof from it and takes no part in its activity,[2] the independence of its life is not compromised by this union, nor is it conditioned in any way by the life of the body. But on the other hand, whether we look at the matter from our own or from Aristotle's point of view, the individuality which belongs to Reason as a part of the human soul appears in this way to be sacrificed. For according to Aristotle the individual Callias or the individual Socrates is constituted only by the union of the universal form of man with this particular human body.[3] So, in like manner, only when Reason enters a human body and employs it as its instrument do we have an individual human reason. But how when it is united with no body, or when in spite of such union it has no material organ and is wholly unaffected by the body, it could be the reason of this definite individual—how, in other words, it could constitute a rational Ego, baffles comprehen-

[1] In the passage 736, b, 15 sqq. referred to at p. 96 *sup.*, it is said with regard to the *ψυχὴ αἰσθητικὴ* and *νοητικὴ*: *ἀναγκαῖον δὲ ἤτοι μὴ οὔσας πρότερον* [sc. *τὰς ψυχὰς*] *ἐγγίνεσθαι πάσας. ἢ πάσας προϋπαρχούσας, ἢ τὰς μὲν τὰς δὲ μή, καὶ ἐγγίνεσθαι ἢ ἐν τῇ ὕλῃ* [therefore in the menses] *μὴ εἰσελθούσας ἐν τῷ τοῦ ἄρρενος σπέρματι, ἢ ἐνταῦθα* [in the mother] *μὲν ἐκεῖθεν* [from the *σπέρμα*] *ἐλθούσας, ἐν δὲ τῷ ἄρρενι ἢ θύραθεν ἐγγινομένας ἁπάσας ἢ μηδεμίαν ἢ τὰς μὲν τὰς δὲ μή.* As the passage proceeds immediately to say (see p. 96, n. 1), *ὅτι μὲν τοίνυν οὐχ οἷόν τε πάσας προϋπάρχειν, φανερόν ἐστιν* [since some are united to bodily organs], *ὥστε καὶ θύραθεν εἰσιέναι ἀδύνατον*—it is obvious that according to Aristotle *προϋπάρχειν* and *θύραθεν εἰσιέναι* are inseparably connected, and that accordingly if the latter is true of the Nous and of it alone, the former must also be true.

[2] Cf. p. 94, n. 2, p. 96, n. 1, *sup.* (*οὐθὲν αὐτοῦ τῇ ἐνεργείᾳ κοινωνεῖ σωματικὴ ἐνέργεια*).

[3] Cf. i. 369, n. 5, 6, *supra.*

sion.[1] Aristotle himself says,[2] indeed, that we do not recollect the former existence of active reason, because it is the passive reason which renders thought possible, and this is perishable;[3] just as he predicates con-

[1] How its connection with the body is in this case possible at all is equally unintelligible, seeing that according to p. 106, n. 5, *infra*, the body is connected with the soul itself as its tool.

[2] In the words quoted p. 98, n. 1, *sup.*, from *De An.* iii. 5, 430, a, 23: οὐ μνημονεύομεν δὲ &c. It does not matter very much whether we understand these words in their simplest sense as meaning that in the present life we have no recollection of the former one, or that after death we have no recollection of the present life, or more generally that the eternal life of the active Nous is wholly without memory—for the reasons why 'we do not remember' hold of the continuity of consciousness between the life which the reason lives in union with the passive Nous and that which it lives in freedom from it both backwards and forwards. In the first instance, however (as is shown by BIEHL, *Ueb. d. Begr. des νοῦς b. Arist.* Linz, 1864, p. 12 sq., and TRENDELENBURG *in loco*, who, however, afterwards, n. on p. 404, 2nd ed., changed his view), the words certainly mean that in the present life we remember no former one. This is the meaning suggested by the context and supported by the present tense of the verb.

[3] Οὐ μνημονεύομεν δὲ ὅτι τοῦτο μὲν ἀπαθές, ὁ δὲ παθητικὸς νοῦς φθαρτὸς καὶ ἄνευ τούτου οὐθὲν νοεῖ. TRENDELENBURG translates the latter words, 'and as the passive reason does not think anything apart from the active reason.' But it is not easy to see what they add to the explanation. If memory belongs to the νοῦς παθητικὸς of course, as φθαρτὸς (which as the antithesis of ἀΐδιον refers to the beginning as well as the ending of existence, cf. i. 366, n. 1 *fin. supra*) the latter can have no recollection of the time in which it did not yet exist, or at the time in which it no longer exists; and the remark καὶ ἄνευ &c. is therefore superfluous. If, on the other hand, it is the νοῦς ἀπαθὴς to which memory belongs, the failure of memory is not explained at all, since it is said, not that it cannot do without the νοῦς παθητικὸς, but that the νοῦς παθ. cannot do without it in the exercise of its activity. We must take τούτου, therefore, as meaning the νοῦς παθητ. and νοεῖ either in an absolute sense, according to a familiar usage in Aristotle = οὐθὲν νοεῖ ὁ νοῶν (or ἡ ψυχή), no thought is possible, or as having the active Nous for its subject. The latter is not inconsistent with the previous οὐχ ὁτὲ μὲν νοεῖ &c. (p. 98, n. 1); for even there it is admitted that in the individual potential knowledge precedes actual, and therefore οὐχ ὁτὲ μὲν νοεῖ &c. does not apply to individual thought. It is of this, however, that we must understand Aristotle to speak in the words, ἄνευ τούτου οὐθὲν νοεῖ, which mean, therefore, nothing

tinuous thought (which he attributes to active reason) only of reason in general, and not of reason in any individual.[1] But where shall we look for that principle of reason which is unchangeable, eternal, unfettered by the body, and ceaselessly active, if it coincides neither with the Divine thought on the one hand, nor with the thought of any individual on the other?

No less serious are the difficulties that surround the doctrine of the passive reason. We understand what led Aristotle to distinguish in the first instance a two-fold reason in man: he could not overlook the gradual evolutions of the spiritual life and the difference between the faculty and the activity of Thought; while, on the other hand, he was forbidden by the principles of his philosophy to think of Pure Reason as in any sense material, or at least to predicate of it attributes and states which can belong to matter alone. We see, also, what in general he meant by the phrase Passive Reason: viz. the sum of those faculties of representation which go beyond imagination and sensible perception and yet fall short of that higher Thought, which has found peace in perfect unity with its object. The Passive Reason is that side of Thought which deals with the manifold of sense. It has its roots in the life of the body, and develops out of sensible experience.[2]

more than the statement elsewhere made, that the soul cannot think without a φάντασμα (cf. p. 108, n. 2, *infra*).

[1] In the words of the passage we have been discussing (p. 98, n. 1): ἡ δὲ κατὰ δύναμιν χρόνῳ προτέρα ἐν τῷ ἑνὶ &c.

[2] In this sense BRANDIS (*Gesch. d. Entw.* i. 518, cf. *Handb.* ii. b, 1178) understands by 'passive spirit,' spirit 'in its connection with representation in so far as it borrows the material for mediating thought from it and sensible perception and requires mental pictures,' or 'in so far as it operates as mediat-

But when we go on and try to form a more definite conception of this part or faculty of the soul, we find the theory full of the most obvious contradictions and defects. On the other hand, Passive Reason is identified with Nous and the spiritual element in man. This Aristotle definitely distinguishes from all the faculties of sense-perception, so that it is impossible to identify it either, as Trendelenburg [1] did, with the unity of these, or, as Brentano does,[2] with fancy as the seat of mental pictures.[3] All these man has in common with the beasts, whereas Nous is that which elevates him above them.[4] And yet, on the other hand, everything is denied of the Passive Reason as such, which elsewhere is regarded as peculiarly characteristic of Reason itself. Speaking of Nous quite generally, Aristotle says that it is neither born nor dies; it is liable to neither suffering nor change; it is separate from the body and has no bodily organ; it acts altogether independently of the body: it enters it from without; it

ing thought.' Similarly, BIEHL, *Ueb. d. Begr. d. νοῦς b. Arist.* (Linz, 1864, *Gymn. Progr.*), pp. 16 sq. But the difficulties above noted are not thus met.

[1] *Arist. De An.* 493 (405): 'Quæ a sensu inde ad imaginationem mentem antecesserunt, ad res percipiendas menti necessaria; sed ad intellegendas non sufficiunt. Omnes illas, quæ praæcedunt, facultates in unum quasi nodum collectas, quatenus ad res cogitandas postulantur, νοῦν παθητικὸν dictas esse arbitramur.' Similarly, HERTLING, *Mat. u. Form*, 174, defines νοῦς παθ. as 'the cognitive capacity of the sensitive part.'

[2] *Psychol. d. Ar.* 208 sq.

[3] Upon which see p. 108, n. 2, *infra*.

[4] Cf. p. 58 sq., p. 61, with p. 93 *supra*. The name itself of νοῦς παθητ. is a preliminary objection to this explanation. For the faculties of sensation and presentation Aristotle has the fixed terms, αἴσθησις and φαντασία. Why, then, should he make use of another incomprehensible and misleading one without giving any indication that it is synonymous with these terms? Nor can appeal be made to *Eth.* vi. 12, 1143, b, 4, as αἴσθησις does not there mean sense-perception; cf. i. 250, n. 1, *supra*.

neither comes into existence with it nor perishes with it.[1] Yet in the sequel we learn that all this holds in truth only of the Active Reason. It alone is bodiless, impassible, eternal, imperishable, &c.[2] By what right, then, Passive Reason can be regarded as Nous, or how two natures with characteristics so incompatible—the one mutable, the other immutable; the one passive, the other impassive; the one mere potentiality, the other ceaseless activity—how these two can constitute one being, one spiritual personality, passes comprehension. Nor do we require to look further than the impossibility of harmonising the Aristotelian doctrine of the twofold Reason with itself to find an explanation of the wide

[1] Cf. p. 93 sq.

[2] See p. 98. The attempt to obviate this difficulty by the supposition of a third form of *νοῦς*, as the 'receptive understanding,' differing alike from the active and the passive reason and alluded to *De An.* iii. 4 (BRENTANO, *Psychol. d. Ar.* 143, 175, 204 sq. 208; HERTLING, *Mat. u. Form*, 170 sq.) cannot be supported. Aristotle indeed calls *νοῦς* (*De An.* iii. 4, 429, a, 15) *δεκτικὸν τοῦ εἴδους*, but there is not a word to indicate that he regards this 'receptive' reason as a third faculty different from the active and passive. He is speaking in *De An.* iii. 4 of Nous quite generally, as he does also in identical terms and with the same generality in *De An.* i. 4. ii. 1, 2; *Gen. An.* ii. 3 (p. 94, n. 2; p. 95, n. 1, p. 96, n. 2, *sup.*). It is equally difficult to obtain any clear conception of this 'receptive understanding' or to find a place for it in Aristotle's doctrine of the soul. Nor, indeed, would anything be gained by such an assumption. If it is said, in *De An.* iii. 5, that the active Nous alone is *χωριστὸς*, *ἀπαθὴς*, *ἀμιγὴς*, *ἀθάνατος*, *ἀΐδιος*, and if the same predicates are assigned in c. 4 to a different faculty, i.e. the 'receptive' reason (there is no express mention, indeed, here of its eternity, but this is involved in *χωριστὸς*), we have simply a contradiction in terms. If, on the other hand, those predicates are first assigned to Nous in general, and it is afterwards added that they belong only to the higher part of it, whereas the other statement made about it (that it is nothing *ἐνεργείᾳ* before it thinks; see, p. 94, n. 2, *supra*) is true of its lower part, there is at least no obvious contradiction in the explanation. In this case the difficulty arises later, when we further ask how are we to conceive of these two parts in detail.

divergence of the views of its critics as to its true meaning.[1]

Reason realises itself in Thought, which regarded in its essence is not the mediate process of forming conceptions by the gradual union of their several parts, but is a single immediate apprehension of intelligible reality, constituting one indivisible act.[2] It deals, not with

[1] Theophrastus had already found difficulties in Aristotle's doctrine of the Nous (cf. 2nd ed. pp. 677 sq.) The example of Aristocles and Alexander of Aphrodisias shows (cf. ZELL. pt. iii. a. 703 sq. 712) how the later Peripatetics differed on the subject. Cf. further the citations and explanations of THEMIST. *De An.* 89, b, 9 sq. and PHILOP. *De An.* Q. 2, and sqq. (less satisfactory is SIMPL. *De An.* 67, b, f.). In the middle ages it was chiefly among the Arabian philosophers and the Italian followers of Averroës that the question was debated. The older and the more recent views upon the doctrine of the twofold nature of the Nous, especially (p. 8–29) those of Avicenna, Averroës and Thomas, are fully discussed by BRENTANO, *ibid.* 5 sqq.

[2] As already shown (i. 203, n. 3, *sup.*), Aristotle describes the thinking of νοῦς as a *contact* of it with the object of thought. In this way it has unity and especially qualitative simplicity, which is not, like the unity of space and time, again itself divisible; *De An.* iii. 6 *init.*: ἡ μὲν οὖν τῶν ἀδιαιρέτων νόησις ἐν τούτοις, περὶ ἃ οὐκ ἔστι τὸ ψεῦδος . . . τὸ δ' ἀδιαίρετον ἐπεὶ διχῶς, ἢ δυνάμει ἢ ἐνεργείᾳ, οὐθὲν κωλύει νοεῖν τὸ ἀδιαίρετον, ὅταν νοῇ τὸ μῆκος· ἀδιαίρετον γὰρ ἐνεργείᾳ καὶ ἐν χρόνῳ ἀδιαιρέτῳ· ὁμοίως γὰρ ὁ χρόνος διαιρετὸς καὶ ἀδιαίρετος τῷ μήκει. οὔκουν ἔστιν εἰπεῖν ἐν τῷ ἡμίσει τί ἐνοεῖ ἑκατέρῳ, οὐ γάρ ἐστιν, ἂν μὴ διαιρεθῇ, ἀλλ' ἢ δυνάμει [i.e. in every spatial quantity, if it is presented, not successively, but simultaneously as a whole, an ἀδιαίρετον is thought, for though divisible it is not actually divided] . . . τὸ δὲ μὴ κατὰ ποσὸν ἀδιαίρετον ἀλλὰ τῷ εἴδει νοεῖ ἐν ἀδιαιρέτῳ χρόνῳ καὶ ἀδιαιρέτῳ τῆς ψυχῆς. After showing further that in the case of space and time the indivisible quantities like the point are known only by antithesis to the divisible, and that this is so also with evil, Aristotle continues, 430, b, 24: εἰ δέ τινι μὴ ἔστιν ἐναντίον τῶν αἰτίων [these words, which TORSTRIK also, 193 sqq., endeavours to emend by a conjecture which is not quite clear, seem obviously to be most simply emended by assuming that τῶν αἰτίων, for which Cod. S. gives τ. ἐναντίων, has arisen from ἐναντίον by a reader's error and duplication; for the πρῶτον, the divine reason, is said also to have no ἐναντίον by reason of its immateriality, *Metaph.* xii. 10, 1075, b, 21, 24], αὐτὸ ἑαυτὸ γινώσκει καὶ ἐνεργείᾳ ἐστὶ καὶ χωριστόν. That this knowledge is immediate

any combination of conceptions, but with the pure conceptions themselves, which are the undemonstrable presuppositions of all knowledge. It is, therefore, absolutely true and infallible,[1] and must be distinguished from mediate apprehension[2] or knowledge.[3] Yet Aristotle fails to tell us what are the faculties upon which its exercise depends and what is its relation to these, although we can hardly but suppose that some operation of the Active upon the Passive Reason is here meant. Similarly Opinion[4] may be regarded as the product of Reason and Perception,[5] although here also

is implied both here and in passages such as *Anal. Post.* i. 3, 72, b, 18, ii. 9 *init.* (τῶν τί ἐστι τὰ μὲν ἄμεσα καὶ ἀρχαί εἰσιν, ἃ καὶ εἶναι καὶ τί ἐστιν ὑποθέσθαι δεῖ ἢ ἄλλον τρόπον φανερὰ ποιῆσαι); c. 10, 94, a, 9, where it is added that the reason is the faculty which has to do with first principles. Cf. i. 245 sqq., i. 197, n. 4, *supra.*

[1] See i. 197, n. 4, *supra.*

[2] This mediate knowledge was distinguished from νοῦς by Plato by the name διάνοια or ἐπιστήμη (see ZELL. pt. i. 536, 2); similarly Arist. *De An.* i. 4, 408, b, 24 sqq. where it is called διάνοια, and *ibid.* ii. 3, 415, a, 7 sqq. where it is called λογισμὸς and διάνοια. Usually, however, Aristotle employs διάνοια and διανοεῖσθαι in a wider sense, for thought generally (*e.g. Metaph.* vi. 1, 1025, b, 6; *Polit.* vii. 2, 1324, a, 20, c. 3, 1325, b, 20; *Eth.* ii. 1 *init.*; *Poët.* 6, 1450, a, 2, and elsewhere); τὸ λογιστικὸν indicates (*De An.* iii. 9, 432, b, 26) likewise the faculty of thought in general, although in most places (*e.g. Eth.* vi. 2, 1139, a, 12, sqq.; *De An.* iii. 10, 433, a, 12, b, 29, c. 11, 434, a, 7) it is the deliberative faculty, or practical reason (see *infra*). On διάνοια, cf. ALEX. on *Metaph.* 1012, a, 2; THEMIST. *De An.* 71, b, o; TRENDELENBURG, *Arist. De An.* 272; SCHWEGLER, *Arist. Metaph.* iii. 183; BONITZ, *Arist. Metaph.* ii. 214, and especially WAITZ, *Arist. Org.* ii. 298; on λογισμὸς BONITZ, *ibid.* 39 sq.

[3] *Eth.* vi. 3, 1139, b, 31 (after explaining the distinguishing characteristics of ἐπιστήμη): ἡ μὲν ἄρα ἐπιστήμη ἐστὶν ἕξις ἀποδεικτική. See further *ibid.* above and cf. i. 163, n. 3. It is a further meaning of the word when in *Anal. Post.* i. 3, 72, b, 18, 33, 88, a, 36, an ἐπιστήμη ἀναπόδεικτος is spoken of, and defined as ὑπόληψις τῆς ἀμέσου προτάσεως (on which see i. 197, *supra*).

[4] On the difference between opinion and knowledge, see i. 163, *supra.*

[5] On the one hand, δόξα has to do, not, like knowledge, with

we are without any express statement. Moreover, it must be by the operation of Reason that man can recall at pleasure his former impressions and recognise them as his own.[1] To the same source in Reason we must refer, lastly, practical wisdom or insight (φρόνησις) and art. These Aristotle distinguishes from knowledge in that they both refer to something that can be otherwise than it is; the former having for its object an action, the latter a creation.[2] He remarks, however, at the same time that they both depend upon right knowledge, and he singles out wisdom especially as one of the intellectual virtues.[3] But that which reveals more clearly than anything else the dependence of reason upon the lower faculties in Aristotle's doctrine

the necessary and immutable, but with τὸ ἐνδεχόμενον ἄλλως ἔχειν, it is ὑπόληψις τῆς ἀμέσου προτάσεως καὶ μὴ ἀναγκαίας (*Anal. Post.* i. 33, 89, a, 2; cf. *Metaph.* vii. 15, 1039, b, 31; *Eth.* vi. 3, 1139, b, 18); the contingent, however, can only be known empirically by perception. On the other hand, ὑπόληψις, which in reality coincides in meaning with δόξα (*Eth. ibid.*; *Top.* vi. 11, 149, a, 10; *Categ.* 7, 8, b. 10; *Anal. Pri.* ii. 21, 66, b, 18, 67, b, 12 sqq. and elsewhere; WAITZ, *Arist. Org.* i. 523), is assigned to νοῦς, and δόξα is distinguished (*De An.* iii. 3, 428, a, 20) from φαντασία by the remark: δόξῃ μὲν ἕπεται πίστις (οὐκ ἐνδέχεται γὰρ δοξάζοντα οἷς δοκεῖ μὴ πιστεύειν), τῶν δὲ θηρίων οὐθενὶ ὑπάρχει πίστις, φαντασία δὲ πολλοῖς. ἔτι πάσῃ μὲν δόξῃ ἀκολουθεῖ πίστις, πίστει δὲ τὸ πεπεῖσθαι, πειθοῖ δὲ λόγος· τῶν δὲ θηρίων ἐνίοις φαντασία μὲν ὑπάρχει, λόγος δ' οὔ.

[1] See p. 74, n. 1, *supra*.

[2] *Eth.* vi. 4, 1140, a, 16: ἐπεὶ δὲ ποίησις καὶ πρᾶξις ἕτερον, ἀνάγκη τὴν τέχνην ποιήσεως ἀλλ' οὐ πράξεως εἶναι. Thus τέχνη is defined (*Eth.* vi. 4) ἕξις μετὰ λόγου ἀληθοῦς ποιητική, φρόνησις (*ibid.* and c. 5, 1140, a, 3, b, 4) ἕξις ἀληθὴς μετὰ λόγου πρακτικὴ περὶ τὰ ἀνθρώπῳ ἀγαθὰ καὶ κακά. On the former see further i. 208, n. 1, *supra*; on the latter *Eth.* vi. 7 sq., c. 11, 1143, a, 8, c. 13, 1143, b, 20, vi. 1152, a, 8; *Polit.* iii. 4, 1277, a, 14, b, 25; and on ποίησις and πρᾶξις i. 183, n. 1, *supra*. We shall return to both in discussing the Ethics.

[3] See preced. n. and *Rhet.* i. 9, 1366, b, 20: φρόνησις δ' ἐστὶν ἀρετὴ διανοίας, καθ' ἣν εὖ βουλεύεσθαι δύνανται περὶ ἀγαθῶν καὶ κακῶν τῶν εἰρημένων εἰς εὐδαιμονίαν.

is his view of the gradual evolution of Knowledge out of Perception and Experience.[1] He remarks, also, that all thoughts are necessarily accompanied by an inner representation or imaginative picture, whose service to Thought is similar to that of the drawn figure to the mathematician. And for this he finds a reason in the inseparable union of insensible Forms with sensible Things.[2] This complete interdependence of reason and sense, however, only makes all the more palpable the gaps which Aristotle's doctrine of Nous leaves between the two.

The same is true also of the practical activity of Reason in the sphere of the Will.[3] Even in the lower irrational animals Desire springs from sensation, for wherever there is sensation there is pleasure and pain, and with these comes Desire, which is indeed nothing else than the effort after what is pleasant.[4] Sensation announces to us in the first place only the existence of an object, and towards this we place ourselves by the feelings of pleasure and pain in definite attitudes of acceptance or refusal. We feel it to be good or bad,

[1] See i. 205, *supra*.

[2] *De An.* iii. 8; see also *ibid.* c. 7, 431, a, 14: τῇ δὲ διανοητικῇ ψυχῇ τὰ φαντάσματα οἷον αἰσθήματα ὑπάρχει . . . διὸ οὐδέποτε νοεῖ ἄνευ φαντάσματος ἡ ψυχή. b, 2: τὰ μὲν οὖν εἴδη τὸ νοητικὸν ἐν τοῖς φαντάσμασι νοεῖ. *De Mem.* 1, 419, b, 30: ἐπεὶ δὲ . . . νοεῖν οὐκ ἔστιν ἄνευ φαντάσματος· συμβαίνει γὰρ τὸ αὐτὸ πάθος ἐν τῷ νοεῖν ὅπερ καὶ ἐν τῷ διαγράφειν· ἐκεῖ τε γὰρ οὐθὲν προσχρώμενοι τῷ τὸ ποσὸν ὡρισμένον εἶναι τὸ τριγώνου, ὅμως γράφομεν ὡρισμένον κατὰ τὸ ποσόν· καὶ ὁ νοῶν ὡσαύτως, κἂν μὴ ποσὸν νοῇ, τίθεται πρὸ ὀμμάτων ποσὸν, νοεῖ δ' οὐχ ᾗ ποσόν. ἂν δ' ἡ φύσις ᾖ τῶν ποσῶν, ἀόριστον δὲ, τίθεται μὲν ποσὸν ὡρισμένον, νοεῖ δ' ᾗ ποσὸν μόνον.

[3] SCHRADER, *Arist. de Voluntate Doctrina*, Brandenb. 1847. (*Gymn. Progr.*); WALTER, *Die Lehre v. d. prakt. Vernunft in d. griech. Phil.* 1874.

[4] *De An.* ii. 2, 413, b, 23, 3, 414, b, 4; *De Somno*, 1, 454, b, 29; *Part. An.* ii. 17, 661, a, 6; cf. p. 22, n. 1, *supra*.

and there arises in us in consequence longing or abhorrence—in a word, a Desire.[1] The ultimate ground of this desire lies in 'the practical good,' *i.e.* in that of which the possession or non-possession depends upon our own action. The thought of this good sets the appetitive part of the soul in motion,[2] which in turn through the organs of the body moves the living creature.[3] The inner process by which desire arises

[1] *De An.* iii. 7, 431, a. 8: τὸ μὲν οὖν αἰσθάνεσθαι ὅμοιον τῷ φάναι μόνον καὶ νοεῖν· ὅταν δὲ ἡδὺ ἢ λυπηρὸν, οἷον καταφᾶσα ἢ ἀποφᾶσα, διώκει ἢ φεύγει· [cf. *Eth.* vi. 2, 1139, a, 21: ἔστι δ', ὅπερ ἐν διανοίᾳ κατάφασις καὶ ἀπόφασις, τοῦτ' ἐν ὀρέξει δίωξις καὶ φυγή.] καὶ ἔστι τὸ ἥδεσθαι καὶ λυπεῖσθαι τὸ ἐνεργεῖν τῇ αἰσθητικῇ μεσότητι πρὸς τὸ ἀγαθὸν ἢ κακὸν, ᾗ τοιαῦτα. καὶ ἡ φυγὴ δὲ καὶ ἡ ὄρεξις τοῦτο [v. l. τὸ αὐτὸ] ἡ κατ' ἐνέργειαν, καὶ οὐχ ἕτερον τὸ ὀρεκτικὸν καὶ φευκτικὸν, οὔτ' ἀλλήλων οὔτε τοῦ αἰσθητικοῦ· ἀλλὰ τὸ εἶναι ἄλλο.

[2] All desire, therefore, presupposes a presentation, although the latter must by no means be mistaken for desire. *De An.* iii. 10, 433, a, 9: φαίνεται δέ γε δύο ταῦτα κινοῦντα, ἢ ὄρεξις ἢ νοῦς, εἴ τις τὴν φαντασίαν τιθείη ὡς νόησίν τινα· πολλὰ γὰρ παρὰ τὴν ἐπιστήμην ἀκολουθοῦσι ταῖς φαντασίαις καὶ ἐν τοῖς ἄλλοις ζῴοις οὐ νόησις οὐδὲ λογισμός ἐστιν, ἀλλὰ φαντασία . . . ὥστε εὐλόγως ταῦτα δύο φαίνεται τὰ κινοῦντα, ὄρεξις καὶ διάνοια πρακτική . . . καὶ ἡ φαντασία δὲ ὅταν κινῇ, οὐ κινεῖ ἄνευ ὀρέξεως. b. 27: ᾗ ὀρεκτικὸν τὸ ζῷον, ταύτῃ αὑτοῦ κινητικόν· ὀρεκτικὸν δὲ οὐκ ἄνευ φαντασίας· φαντασία δὲ πᾶσα ἢ λογιστικὴ ἢ αἰσθητική· [See p. 73, n. 2, *supra*.] ταύτης μὲν οὖν καὶ τὰ ἄλλα ζῷα μετέχει. (Cf. c. 11, 434, a, 5.) Phantasy is thus (as SCHRADER, p. 8 sq. and BRENTANO, *Psychol. d. Ar.* 161, also remark) the link which connects our thoughts with the desires and impulses which spring from them. Of the process, however, by which thought thus passes into desire Aristotle gives no further analysis.

[3] *De An.* iii. 10, 433, a, 27: ἀεὶ κινεῖ μὲν τὸ ὀρεκτὸν [as was previously proved, l. 14 sqq.] ἀλλὰ τοῦτ' ἐστὶν ἢ τὸ ἀγαθὸν ἢ τὸ φαινόμενον ἀγαθόν. οὐ πᾶν δὲ, ἀλλὰ τὸ πρακτὸν ἀγαθόν. πρακτὸν δ' ἐστὶ τὸ ἐνδεχόμενον καὶ ἄλλως ἔχειν. ὅτι μὲν οὖν ἡ τοιαύτη δύναμις κινεῖ τῆς ψυχῆς ἡ καλουμένη ὄρεξις, φανερόν . . . ἐπεὶ δ' ἐστὶ τρία, ἓν μὲν τὸ κινοῦν, δεύτερον δ' ᾧ κινεῖ, τρίτον τὸ κινούμενον· τὸ δὲ κινοῦν διττὸν, τὸ μὲν ἀκίνητον, τὸ δὲ κινοῦν καὶ κινούμενον [cf. i. 389, *supra*]. ἔστι δὲ τὸ μὲν ἀκίνητον τὸ πρακτὸν ἀγαθὸν, τὸ δὲ κινοῦν καὶ κινούμενον τὸ ὀρεκτικὸν (κινεῖται γὰρ τὸ ὀρεγόμενον ᾗ ὀρέγεται, καὶ ἡ ὄρεξις κίνησίς τίς ἐστιν [as TRENDELENBURG rightly reads] ᾗ ἐνέργεια) [v. l. ἢ ἐν.—TORSTR. conjectures ἡ ἐνεργείᾳ, but this is unnecessary], τὸ δὲ κινούμενον τὸ ζῷον· ᾧ δὲ κινεῖ ὀργάνῳ ἡ ὄρεξις, ἤδη τοῦτο σωματικόν ἐστιν. We

Aristotle represents as a syllogistic conclusion, inasmuch as in each action a given case is brought under a general rule.[1] In order properly to understand how bodily movements spring from will and desire we must recollect that all changes of inner feeling involve a corresponding change in the state of the body.[2] This is more fully developed in the treatise on the *Motion of Animals*. The process by which will follows upon the presentation of the object, is, we are told, a kind ot inference. The major premiss is the conception of a general end; the minor premiss is an actual instance coming under the general conception; while the conclusion is the action which issues from the subsumption of the second under the first.[3] Usually, however, the

shall recur to this at a later point. A good commentary on the passage before us is furnished by *De Motu An.* 6, 700, b, 15 sqq., which is probably modelled upon it.

[1] *Eth.* vi. 5, 1147, a, 25: ἡ μὲν γὰρ καθόλου δόξα ἡ δ' ἑτέρα περὶ τῶν καθ' ἕκαστά ἐστιν, ὧν αἴσθησις ἤδη κυρία· [Similarly *De An.* iii. 4, 434, a, 17.] ὅταν δὲ μία γένηται ἐξ αὐτῶν, ἀνάγκη τὸ συμπερανθὲν ἔνθα μὲν φάναι τὴν ψυχὴν, ἐν δὲ ταῖς ποιητικαῖς πράττειν εὐθύς. οἷον, εἰ παντὸς γλυκέος γεύεσθαι δεῖ, τουτὶ δὲ γλυκὺ, ὡς ἕν τι τῶν καθ' ἕκαστον, ἀνάγκη τὸν δυνάμενον καὶ μὴ κωλυόμενον ἅμα τοῦτο καὶ πράττειν. c. 13, 1144, a, 31: οἱ γὰρ συλλογισμοὶ τῶν πρακτῶν ἀρχὴν ἔχοντές εἰσιν, ἐπειδὴ τοιόνδε τὸ τέλος καὶ τὸ ἄριστον. Cf. c. 12, 1143, b, 3 (see i. 197, n. 4, *supra*), where a 'minor premiss' is spoken of in reference to action.

[2] *De An.* i. 1, 403, a, 16: ἔοικε δὲ καὶ τὰ τῆς ψυχῆς πάθη πάντα εἶναι μετὰ σώματος, θυμὸς, πρᾳότης, φόβος, ἔλεος, θάρσος, ἔτι χαρὰ καὶ τὸ φιλεῖν τε καὶ μισεῖν· ἅμα γὰρ τούτοις πάσχει τι τὸ σῶμα. This is seen in the fact that according to the physical state forcible impressions at one time produce no effect; at another, light impressions produce a deep effect. ἔτι δὲ τοῦτο μᾶλλον φανερόν· μηθενὸς γὰρ φοβεροῦ συμβαίνοντος ἐν τοῖς πάθεσι γίνονται τοῖς τοῦ φοβουμένου [in consequence of physical states]. εἰ δ' οὕτως ἔχει, δῆλον ὅτι τὰ πάθη λόγοι ἔνυλοί εἰσιν. ὥστε οἱ ὅροι τοιοῦτοι οἷον τὸ ὀργίζεσθαι κίνησίς τις τοῦ τοιουδὶ σώματος ἢ μέρους ἢ δυνάμεως ὑπὸ τοῦδε ἕνεκα τοῦδε. Cf. *Eth. ibid.* 1147, a, 15, and what is said, p. 75, n. 2, on pleasure and pain as events in the αἰσθητικὴ μεσότης.

[3] *Mot. An.* 7, 701, a, 7: πῶς δὲ νοῶν ὁτὲ μὲν πράττει, ὁτὲ δ' οὐ πράττει, καὶ κινεῖται, ὁτὲ δ' οὐ

syllogism assumes a simpler form by the omission of the obvious minor premiss;[1] while, on the other hand, the usurpation of the place of the major premiss by the demands of desire, in cases when we act without consideration, constitutes rashness.[2] The power of the will, however, to move the organs of our body is here explained as an effect of the heat and cold, which are caused by the feelings of pleasure and pain; these in turn, by the expansion or contraction of particular parts, produce certain changes and movements in the body.[3]

κινεῖται; ἔοικε παραπλησίως συμβαίνειν καὶ περὶ τῶν ἀκινήτων διανοουμένοις καὶ συλλογιζομένοις. ἀλλ' ἐκεῖ μὲν θεώρημα τὸ τέλος . . . ἐνταῦθα δ' ἐκ τῶν δύο προτάσεων τὸ συμπέρασμα γίνεται ἡ πρᾶξις, οἷον ὅταν νοήσῃ ὅτι παντὶ βαδιστέον ἀνθρώπῳ, αὐτὸς δ' ἄνθρωπος, βαδίζει εὐθέως. After illustrating this by further examples, Aristotle proceeds, l. 23: αἱ δὲ προτάσεις αἱ ποιητικαὶ διὰ δύο εἰδῶν γίνονται, διά τε τοῦ ἀγαθοῦ καὶ διὰ τοῦ δυνατοῦ [the latter perhaps with reference to *Eth.* iii. 5, 1112, b, 24 sqq.].

[1] *Ibid.* l. 25: ὥσπερ δὲ τῶν ἐρωτώντων ἔνιοι, οὕτω τὴν ἑτέραν πρότασιν τὴν δήλην οὐδ' ἡ διάνοια ἐφιστᾶσα σκοπεῖ οὐδέν· οἷον εἰ τὸ βαδίζειν ἀγαθὸν ἀνθρώπῳ, ὅτι αὐτὸς ἄνθρωπος, οὐκ ἐνδιατρίβει.

[2] L. 28: διὸ καὶ ὅσα μὴ λογισάμενοι πράττομεν, ταχὺ πράττομεν. ὅταν γὰρ ἐνεργήσῃ ἢ τῇ αἰσθήσει πρὸς τὸ οὗ ἕνεκα ἢ τῇ φαντασίᾳ ἢ τῷ νῷ, οὗ ὀρέγεται εὐθὺς ποιεῖ· ἀντ' ἐρωτήσεως γὰρ ἢ νοήσεως ἡ τῆς ὀρέξεως γίνεται ἐνέργεια. ποτέον μοι, ἡ ἐπιθυμία λέγει· τοδὶ δὲ ποτὸν ἡ αἴσθησις εἶπεν ἢ ἡ φαντασία ἢ ὁ νοῦς. εὐθὺς πίνει.

[3] *Ibid.* 701, b, 1: Just as automata, owing to the mechanical adjustment of the cylinders, are set in motion by a slight touch, so with living beings, in whom the bones take the place of wood and iron, the sinews that of the cylinders (cf. also the passage quoted p. 53, n. 2, from *Gen. An.* ii. 5). The impulse, however, in their case is given αὐξανομένων τῶν μορίων διὰ θερμότητα καὶ πάλιν συστελλομένων διὰ ψύξιν καὶ ἀλλοιουμένων. ἀλλοιοῦσι δ' αἱ αἰσθήσεις καὶ αἱ φαντασίαι καὶ αἱ ἔννοιαι. αἱ μὲν γὰρ αἰσθήσεις εὐθὺς ὑπάρχουσιν ἀλλοιώσεις τινὲς οὖσαι, ἡ δὲ φαντασία καὶ ἡ νόησις τὴν τῶν πραγμάτων ἔχουσι δύναμιν· τρόπον γάρ τινα τὸ εἶδος τὸ νοούμενον τὸ τοῦ θερμοῦ ἢ ψυχροῦ ἢ ἡδέος ἢ φοβεροῦ τοιοῦτον τυγχάνει ὂν οἷόν περ καὶ τῶν πραγμάτων ἕκαστον, διὸ καὶ φρίττουσι καὶ φοβοῦνται νοήσαντες μόνον. ταῦτα δὲ πάντα πάθη καὶ ἀλλοιώσεις εἰσίν. ἀλλοιουμένων δ' ἐν τῷ σώματι τὰ μὲν μείζω τὰ δ' ἐλάττω γίνεται. ὅτι δὲ μικρὰ μεταβολὴ γενομένη ἐν ἀρχῇ μεγάλας καὶ πολλὰς ποιεῖ διαφορὰς ἄποθεν, οὐκ ἄδηλον; a slight movement of the helm produces a great effect upon the bow of a ship, so a small change

Under Will also Aristotle—who, like Plato, does not regard Emotion as a peculiar form of activity—classes all that we should rather place under the latter head. Love, for example, he refers to *θυμὸς*, by which he understands, not only spirit, but also heart.[1]

As Aristotle proceeds, however, Desire is found to bear a different character according as it springs from rational representation or not. Granted that it is always the desirable that causes desire in us, yet the desirable may be either a real or merely an apparent good,[2] and so the desire itself may either spring from rational reflection or be irrational.[3] To the latter class

in the heart causes flushing, pallor, trembling, &c. over the whole body. C. 8: ἀρχὴ μὲν οὖν, ὥσπερ εἴρηται, τῆς κινήσεως τὸ ἐν τῷ πρακτῷ διωκτὸν καὶ φευκτόν· ἐξ ἀνάγκης δ' ἀκολουθεῖ τῇ νοήσει καὶ τῇ φαντασίᾳ αὐτῶν θερμότης καὶ ψύξις. τὸ μὲν γὰρ λυπηρὸν φευκτόν, τὸ δ' ἡδὺ διωκτόν, . . . ἔστι δὲ τὰ λυπηρὰ καὶ ἡδέα πάντα σχεδὸν μετὰ ψύξεώς τινος καὶ θερμότητος. So with fear, fright, sexual pleasure, &c. μνῆμαι δὲ καὶ ἐλπίδες, οἷον εἰδώλοις χρώμενοι τοῖς τοιούτοις, ὁτὲ μὲν ἧττον ὁτὲ δὲ μᾶλλον αἰτίαι τῶν αὐτῶν εἰσίν. And since the inward parts from which the motion of the limbs proceeds are so arranged that these changes take place very easily in them, the motions follow our thoughts instantaneously. τὰ μὲν γὰρ ὀργανικὰ μέρη [accusative] παρασκευάζει ἐπιτηδείως τὰ πάθη, ἡ δ' ὄρεξις τὰ πάθη, τὴν δ' ὄρεξιν ἡ φαντασία· αὕτη δὲ γίνεται ἢ διὰ νοήσεως ἢ δι' αἰσθήσεως. ἅμα δὲ καὶ ταχὺ διὰ τὸ ποιητικὸν καὶ παθητικὸν τῶν πρὸς ἄλληλα εἶναι τὴν φύσιν.

[1] *Polit.* vii. 7, 1327, b, 40: ὁ θυμός ἐστιν ὁ ποιῶν τὸ φιλητικόν· αὕτη γάρ ἐστιν ἡ τῆς ψυχῆς δύναμις ᾗ φιλοῦμεν. σημεῖον δέ· πρὸς γὰρ τοὺς συνήθεις καὶ φίλους ὁ θυμὸς αἴρεται μᾶλλον, ἢ πρὸς τοὺς ἀγνῶτας, ὀλιγωρεῖσθαι νομίσας. Cf. foll pages.

[2] *De An.* iii. 10; see i. 109, n. 3, *supra*.

[3] *De An.* iii. 10, 433, a, 9 (see i. 109, n. 2, *sup.*); l. 22: νῦν δὲ ὁ μὲν νοῦς οὐ φαίνεται κινῶν ἄνευ ὀρέξεως· ἡ γὰρ βούλησις ὄρεξις· ὅταν δὲ κατὰ τὸν λογισμὸν κινῆται, καὶ κατὰ βούλησιν κινεῖται. ἡ δ' ὄρεξις κινεῖ παρὰ τὸν λογισμόν. ἡ γὰρ ἐπιθυμία ὄρεξίς τις ἐστίν. νοῦς μὲν οὖν πᾶς ὀρθός· ὄρεξις δὲ καὶ φαντασία καὶ ὀρθὴ καὶ οὐκ ὀρθή. b, 5: ἐπεὶ δ' ὀρέξεις γίνονται ἐναντίαι ἀλλήλαις, τοῦτο δὲ συμβαίνει ὅταν ὁ λόγος καὶ ἡ ἐπιθυμία ἐναντίαι ὦσι, γίνεται δ' ἐν τοῖς χρόνου αἴσθησιν ἔχουσιν (ὁ μὲν γὰρ νοῦς διὰ τὸ μέλλον ἀνθέλκειν κελεύει, ἡ δ' ἐπιθυμία διὰ τὸ ἤδη) . . . εἴδει μὲν ἓν ἂν εἴη τὸ κινοῦν, τὸ ὀρεκτικόν, ᾗ ὀρεκτικόν, . . . ἀριθμῷ δὲ πλείω τὰ κινοῦντα. *Rhet.* i. 11, 1370, a, 18: τῶν δὲ

belong anger and the appetite for sensual gratification.[1] In so far as reason goes to constitute the conception of the end and reacts upon the desire it is called Practical or Deliberative Reason.[2] Desire which is guided by

ἐπιθυμιῶν αἱ μὲν ἄλογοί εἰσιν αἱ δὲ μετὰ λόγου. Sensual desires are ἄλογοι, μετὰ λόγου δὲ ὅσα ἐκ τοῦ πεισθῆναι ἐπιθυμοῦσιν. *Polit.* iii. 4, 1277, a, 6: ψυχὴ ἐκ λόγου καὶ ὀρέξεως. *Ibid.* vii. 15, 1334, b, 18: τῆς ψυχῆς ὁρῶμεν δύο μέρη, τό τε ἄλογον καὶ τὸ λόγον ἔχον, καὶ τὰς ἕξεις τὰς τούτων δύο τὸν ἀριθμόν, ὧν τὸ μέν ἐστιν ὄρεξις τὸ δὲ νοῦς. Cf. foll. note.

[1] Following Plato, Aristotle often opposes these two forms of ὄρεξις ἄλογος to one another; *Rhet.* i. 10 (see p. 114, n. 3, *infra*). *De An.* ii. 3, 414, b, 2: ὄρεξις μὲν γὰρ ἐπιθυμία καὶ θυμὸς καὶ βούλησις (ἐπιθυμία is then defined as ὄρεξις τοῦ ἡδέος); iii. 9, 432, b, 5: ἔν τε τῷ λογιστικῷ γὰρ ἡ βούλησις γίνεται, καὶ ἐν τῷ ἀλόγῳ ἡ ἐπιθυμία καὶ ὁ θυμός. *Eth.* iii. 4, 1111, b, 10: while προαίρεσις is neither ἐπιθυμία nor θυμὸς, since both the latter belong also to irrational beings, but the former does not. *Polit.* vii. 15 (see p. 114, n. 3, *infra*), cf. *Mot. An.* 6, 700, b, 22, c. 7, 701, a, 32; *Eth. Eud.* ii. 7, 1223, a, 26; *M. Mor.* i. 12, 1187, b, 36. In the *Topics* (ii. 7, 113, a, 35 sq., iv. 5, 126, a, 8, v. 1, 129, a, 10) the Platonic division of the λογιστικὸν, θυμοειδὲς and ἐπιθυμητικὸν is employed as one which is generally recognised, and *Eth.* vii. 7, 1149, a, 24 follows Plato in the remark (*Ph. d. Gr.* i. 714) that it is less disgraceful to be unable to rule θυμὸς than the desires: ἔοικε γὰρ ὁ θυμὸς ἀκούειν μέν τι τοῦ λόγου, παρακούειν δέ; it yields to the first impulse to τιμωρία given by the reason without awaiting its fuller commands: ἐπιθυμία, on the other hand, makes for pleasure the moment that λόγος or αἴσθησις declares anything to be pleasant. Nevertheless in the stricter psychological discussion, *De An.* iii. 9, 432, a, 18 sqq., Aristotle rejects the view that the λογιστικὸν, θυμικὸν and ἐπιθυμητικὸν are the three parts of the soul which produce motions, partly because the distinction between them is less than, *e.g.*, that between the θρεπτικὸν and αἰσθητικὸν, and partly because the ὀρεκτικὸν cannot thus be divided and the soul made to consist of three separate parts.—Aristotle gives no more accurate definition of θυμός; even P. Meyer's minute discussion of the passages that bear upon it (Ὁ θυμὸς *ap. Arist. Platonemque*, Bonn, 1876) arrives at conclusions as unsatisfactory as the shorter one by Walter, *ibid.* 199 sqq. on the customary meaning of the word. According to this, it indicates as a rule the passions which prompt to the avoidance or retaliation of injuries. Nevertheless the tenderer emotions are also assigned to it; cf. p. 112, n. 1.

[2] *De An.* iii. 10, 433, a, 14: νοῦς δὲ [sc. κινητικὸν] ὁ ἕνεκά του λογιζόμενος καὶ ὁ πρακτικός· διαφέρει δὲ τοῦ θεωρητικοῦ τῷ τέλει. καὶ ἡ ὄρεξις ἕνεκά του πᾶσα· οὗ γὰρ ἡ ὄρεξις, αὕτη ἀρχὴ τοῦ πρακτικοῦ νοῦ· τὸ δ' ἔσχατον ἀρχὴ τῆς πρά-

reason Aristotle, with Plato,[1] calls Will in the narrower sense of the word,[2] appropriating the name Desire to its irrational exercise.[3] The latter stands in a twofold relation to reason. On the one hand, it is intended to submit to it, and by this obedience to obtain a share in it. On the other hand, being in its own nature irrational it resists the demands of reason, and often overpowers them.[4] Between these two kinds of impulse stands man with his Free Will; for that we

ξεως. ὥστε εὐλόγως ταῦτα δύο φαίνεται τὰ κινοῦντα, ὄρεξις καὶ διάνοια πρακτική. See further, p. 109, n. 5, *sup.* Cf. c. 9, 432, b, 27. *Eth.* vi. 2, 1139, a, 6: ὑποκείσθω δύο τὰ λόγον ἔχοντα, ἓν μὲν ᾧ θεωροῦμεν τὰ τοιαῦτα τῶν ὄντων, ὅσων αἱ ἀρχαὶ μὴ ἐνδέχονται ἄλλως ἔχειν, ἓν δὲ ᾧ τὰ ἐνδεχόμενα· πρὸς γὰρ τὰ τῷ γένει ἕτερα καὶ τῶν τῆς ψυχῆς μορίων ἕτερον τῷ γένει τὸ πρὸς ἑκάτερον πεφυκός . . . λεγέσθω δὲ τούτων τὸ μὲν ἐπιστημονικὸν τὸ δὲ λογιστικόν. τὸ γὰρ βουλεύεσθαι καὶ λογίζεσθαι ταὐτὸν, οὐθεὶς δὲ βουλεύεται περὶ τῶν μὴ ἐνδεχομένων ἄλλως ἔχειν. L. 26: αὕτη μὲν οὖν ἡ διάνοια καὶ ἡ ἀλήθεια πρακτική, τῆς δὲ θεωρητικῆς διανοίας καὶ μὴ πρακτικῆς μηδὲ ποιητικῆς τὸ εὖ καὶ κακῶς τἀληθές ἐστι καὶ ψεῦδος· τοῦτο γάρ ἐστι παντὸς διανοητικοῦ ἔργον, τοῦ δὲ πρακτικοῦ καὶ διανοητικοῦ ἡ ἀλήθεια ὁμολόγως ἔχουσα τῇ ὀρέξει τῇ ὀρθῇ. L. 35: διάνοια δ' αὐτὴ οὐθὲν κινεῖ, ἀλλ' ἡ ἕνεκά του καὶ πρακτική. *Ibid.* c. 12, 1143, b, 1; see p. 197, n. 4, *supra*. *Polit.* vii. 14, 1333, a, 24: διῄρηταί τε διχῇ [τὸ λόγον ἔχον], καθ' ὅν περ εἰώθαμεν τρόπον διαιρεῖν· ὁ μὲν γὰρ πρακτικός ἐστι λόγος ὁ δὲ θεωρητικός. Cf. p. 106, n. 2, *sup.* For a closer view of the practical reason and the activity which proceeds from it see ch. xii. part 2, *infra.*

[1] *Ph. d. Gr.* i. p. 505.

[2] 'Practical reason' itself must not be mistaken for 'will,' which, to Aristotle, is essentially a desire; the former is merely thought in relation to action.

[3] *De An.* iii. 10, 433, a, 22 sqq. (see p. 112, n. 3, *supra*), and c. 11, 434, a, 12 (see foll. n.), where βούλησις is opposed to ὄρεξις, *Rhet.* i. 10, 1369, a, 2: ἔστι δ' ἡ μὲν βούλησις ἀγαθοῦ ὄρεξις (οὐθεὶς γὰρ βούλεται ἀλλ' ἢ ὅταν οἰηθῇ εἶναι ἀγαθὸν) ἄλογοι δ' ὀρέξεις ὀργὴ καὶ ἐπιθυμία. *Eth.* v. 11, 1136, b, 7: οὔτε γὰρ βούλεται οὐθεὶς ὃ μὴ οἴεται εἶναι σπουδαῖον, ὅ τε ἀκρατὴς οὐχ ἃ οἴεται δεῖν πράττειν πράττει. See further, p. 113, n. 1. Cf. PLATO's statements, *Ph. d. Gr.* i. p. 505, and p. 719, 3. At other times the word has a wider meaning, as *Polit.* vii. 15, 1334, b, 22 (θυμὸς γὰρ καὶ βούλησις ἔτι δὲ ἐπιθυμία καὶ γενομένοις εὐθὺς ὑπάρχει τοῖς παιδίοις). In *Eth.* iii. 6, both meanings are concerned, where to the question whether βούλησις has reference to the good or to the apparently good, the reply is given that *per se*, and in a virtuous man, it is to the former alone; in a bad man, to the latter.

[4] *Eth.* i. 13, 1102, b, 13: we

are the authors of our own actions, and that it lies in our own power to be good or bad,[1] is Aristotle's firm

must distinguish in the soul a rational and an irrational part. The latter, however, is of two kinds. The one of its constituent parts, the nutritive soul, has nothing to do with action; ἔοικε δὲ καὶ ἄλλη τις φύσις τῆς ψυχῆς ἄλογος εἶναι, μετέχουσα μέντοι πῃ λόγου. Both in the temperate and the intemperate man, reason operates on the one hand; φαίνεται δ' ἐν αὐτοῖς καὶ ἄλλο τι παρὰ τὸν λόγον πεφυκὸς, ὃ μάχεταί τε καὶ ἀντιτείνει τῷ λόγῳ. ἀτεχνῶς γὰρ καθάπερ τὰ παραλελυμένα τοῦ σώματος μόρια εἰς τὰ δεξιὰ προαιρουμένων κινῆσαι τοὐναντίον εἰς τὰ ἀριστερὰ παραφέρεται, καὶ ἐπὶ τῆς ψυχῆς· ἐπὶ τἀναντία γὰρ αἱ ὁρμαὶ τῶν ἀκρατῶν . . . καὶ ἐν τῇ ψυχῇ νομιστέον εἶναί τι παρὰ τὸν λόγον, ἐναντιούμενον τούτῳ καὶ ἀντιβαῖνον . . . λόγου δὲ καὶ τοῦτο φαίνεται μετέχειν, ὥσπερ εἴπομεν· πειθαρχεῖ γοῦν τῷ λόγῳ τὸ τοῦ ἐγκρατοῦς . . . φαίνεται δὴ καὶ τὸ ἄλογον διττόν. τὸ μὲν γὰρ φυτικὸν οὐδαμῶς κοινωνεῖ λόγου, τὸ δ' ἐπιθυμητικὸν καὶ ὅλως ὀρεκτικὸν μετέχει πως, ᾗ κατήκοόν ἐστιν αὐτοῦ καὶ πειθαρχικόν . . . ὅτι δὲ πείθεταί πως ὑπὸ λόγου τὸ ἄλογον, μηνύει καὶ ἡ νουθέτησις καὶ πᾶσα ἐπιτίμησίς τε καὶ παράκλησις. εἰ δὲ χρὴ καὶ τοῦτο φάναι λόγον ἔχειν, διττὸν ἔσται καὶ τὸ λόγον ἔχον, τὸ μὲν κυρίως καὶ ἐν αὑτῷ, τὸ δ' ὥσπερ πατρὸς ἀκουστικόν τι. *Polit.* vii 14, 1333, a, 16: διῄρηται δὲ δύο μέρη τῆς ψυχῆς, ὧν τὸ μὲν ἔχει λόγον καθ' αὑτὸ, τὸ δ' οὐκ ἔχει μὲν καθ' αὑτὸ, λόγῳ δ' ὑπακούειν δυνάμενον. *De An.* iii. 11, 434, a, 12: νικᾷ δ' ἐνίοτε [ἡ ὄρεξις] καὶ κινεῖ τὴν βούλησιν· ὁτὲ δ' ἐκείνη ταύτην, ὥσπερ σφαῖρα [v. l. -αν] ἡ ὄρεξις τὴν ὄρεξιν, ὅταν ἀκρασία γένηται. φύσει δὲ ἀεὶ ἡ ἄνω ἀρχικωτέρα καὶ κινεῖ, ὥστε τρεῖς φορὰς ἤδη κινεῖσθαι. The various attempts made to explain and amend the last passage by TRENDELENBURG and TORSTRIK, *in loco*, BRENTANO, *Psychol. d. Ar.* 111 sq., and the Greek commentators (discussed in Tren.), it is the more justifiable here to omit as the thought expressed is clear enough. Departing from previous editions, Zeller would now suggest: . . . ὁτὲ δ' ἐκείνη ταύτην, ὥσπερ ἡ ἄνω σφαῖρα τὴν κάτω, ὁτὲ δ' ἡ ὄρεξις . . . γένηται [φύσει . . . κινεῖ], ὥστε, &c. Aristotle's doctrine differs from that of Plato as presented *Ph. d. Gr.* i. 713 sq., only in this, that in place of the Platonic θυμὸς we have here the appetites as a whole.

[1] *Eth.* iii. 7, 1113, b, 6: ἐφ' ἡμῖν δὲ καὶ ἡ ἀρετὴ, ὁμοίως δὲ καὶ ἡ κακία. ἐν οἷς γὰρ ἐφ' ἡμῖν τὸ πράττειν, καὶ τὸ μὴ πράττειν, καὶ ἐν οἷς τὸ μὴ, καὶ τὸ ναί· ὥστ' εἰ τὸ πράττειν καλὸν ὂν ἐφ' ἡμῖν ἐστι, καὶ τὸ μὴ πράττειν ἐφ' ἡμῖν ἔσται αἰσχρὸν ὄν, καὶ εἰ τὸ μὴ πράττειν καλὸν ὂν ἐφ' ἡμῖν, καὶ τὸ πράττειν αἰσχρὸν ὂν ἐφ' ἡμῖν. εἰ δ' ἐφ' ἡμῖν τὰ κακὰ πράττειν καὶ τὰ αἰσχρὰ, ὁμοίως δὲ καὶ τὸ μὴ πράττειν, τοῦτο δ' ἦν τὸ ἀγαθοῖς καὶ κακοῖς εἶναι, ἐφ' ἡμῖν ἄρα τὸ ἐπιεικέσι καὶ φαύλοις εἶναι . . . ἢ τοῖς γε νῦν εἰρημένοις ἀμφισβητητέον, καὶ τὸν ἄνθρωπον οὐ φατέον ἀρχὴν εἶναι οὐδὲ γεννητὴν τῶν πράξεων, ὥσπερ καὶ τέκνων; εἰ δὲ ταῦτα [if he is author of his own actions] φαίνεται καὶ μὴ ἔχομεν εἰς ἄλλας ἀρχὰς ἀναγαγεῖν παρὰ τὰς ἐφ' ἡμῖν, ὧν καὶ αἱ ἀρχαὶ ἐν

conviction, which he supports by the recognised voluntariness of virtue,[1] and by the moral responsibility which is presupposed in legislation and in the judgment universally passed in rewards and punishments, praise and blame, exhortation and warning.[2] In the case of settled moral states, it is true that he believes it to be partly otherwise. These in their beginnings, indeed, depend upon ourselves; but when we have once become good or bad it is just as little in our power not to be so, as when we are sick to be well.[3] In like manner he admits that when the will has once acquired a definite bent, the external action necessarily follows.[4] But when it is said that all desire what seems good to them, and that they are not responsible for this seeming, Aristotle refuses to admit it, since even the disposition which determines our moral judgments is our own creation.[5] Nor does he regard with more favour the attempt to prove from the nature of the disjunctive judgment the

ἡμῖν καὶ αὐτὰ ἐφ' ἡμῖν καὶ ἑκούσια. c. 5, 1112, b, 31: ἔοικε δή, καθάπερ εἴρηται, ἄνθρωπος εἶναι ἀρχὴ τῶν πράξεων, and elsewhere. On Aristotle's doctrine of the freedom of the will, see SCHRADER, *ibid.*; TRENDELENBURG, *Histor. Beitr.* ii. 149 sqq.

[1] Aristotle frequently makes use of this argument, accusing the dictum of Socrates and Epicharmus, οὐθεὶς ἑκὼν πονηρὸς οὐδ' ἄκων μάκαρ (on which see *Ph. d. Gr.* i. 462, 5, iii. b, 119, 2, cf. 719, 3), of the inconsistency of declaring good to be voluntary, evil involuntary; *Eth.* iii. 7, 1113, b, 14, 1114, b, 12 sqq.

[2] *Eth. ibid.* 1113, b, 21, 1114, a, 31, where this is fully discussed and the question investigated how far and in what cases we are irresponsible for ignorance or mental and bodily defects, and how far, on the other hand, we are responsible for them as in themselves culpable.

[3] *Eth.* iii. 7, 8, 1114, a, 12 sqq., b, 30, cf. v. 13, 1137, a, 4, 17: particular just and unjust actions are voluntary and easy, but τὸ ὡδὶ ἔχοντας ταῦτα ποιεῖν οὔτε ῥᾴδιον οὔτ' ἐπ' αὐτοῖς.

[4] *Metaph.* ix. 5, see i. 385, n. 2, *supra*.

[5] *Ibid.* iii. 7, 1114, a, 31 sqq. The question how far it is possible consciously to commit a mistake is more fully discussed in the *Ethics*. See *infra*.

logical impossibility of a contingent result.[1] On the contrary, he regards voluntariness as an essential condition of all action that is the subject of moral judgment;[2] and if this does not exhaust the conception of volition (for Aristotle calls the actions of children and even of animals voluntary),[3] at least without voluntariness no volition is possible. If all that is voluntary is not also intentional, yet all that is intentional must

[1] See i. 230, n. 4, *supra*. It has already been there shown that Aristotle does not hereby avoid all difficulties; but this only shows more clearly how important he regarded it to rescue the possibility of voluntary actions.

[2] *Eth.* iii. 1 *init.*: τῆς ἀρετῆς δὴ περὶ πάθη τε καὶ πράξεις οὔσης, καὶ ἐπὶ μὲν τοῖς ἑκουσίοις ἐπαίνων καὶ ψόγων γινομένων, ἐπὶ δὲ τοῖς ἀκουσίοις συγγνώμης, &c. In c. 1–3, cf. v. 10, 1135, a, 23 sqq. τὸ ἑκούσιον and ἀκούσιον are fully discussed. According to the account here given, that is involuntary which is done under compulsion or in ignorance. We must distinguish, however, in the former between physical compulsion, which constitutes absolute involuntariness, and moral compulsion, which is only relative; in the latter, between unconscious action (ἀγνοοῦντα ποιεῖν), which may also be voluntary (as when something is done in haste or anger), and action from ignorance (δι' ἄγνοιαν πράττειν). As, further, there are many things on which an action depends (nearly corresponding to the familiar *quis*, *quid*, *ubi*, &c., Aristotle mentions: τίς καὶ τί καὶ περὶ τί ἢ ἐν τίνι πράττει, ἐνίοτε δὲ καὶ τίνι, οἷον ὀργάνῳ καὶ ἕνεκα τίνος), we must ask to which of these the ignorance refers: the action being involuntary in the highest degree when the mistake concerns the essential points of its aim and object. Finally, it makes a difference, according to Aristotle, whether an action committed in ignorance is matter of regret or not; if the doer does not regret it he acquiesces in it, so that while it cannot be regarded as voluntary, it is not involuntary in the sense of being against his will (c. 2 *init.* and *fin.*; cf. vii. 8, 1150, a, 21, c. 9 *init.*). On the other hand, that is (c. 3 *init.*) ἑκούσιον οὗ ἡ ἀρχὴ ἐν αὐτῷ εἰδότι τὰ καθ' ἕκαστα ἐν οἷς ἡ πρᾶξις, or (1135, a, 23) ὃ ἄν τις τῶν ἐφ' αὐτῷ ὄντων εἰδὼς καὶ μὴ ἀγνοῶν πράττῃ μήτε ὃν μήτε ᾧ μήτε οὗ ἕνεκα. Cf. *Rhet.* i. 10, 1368, b, 9: ἑκόντες δὲ ποιοῦσιν ὅσα εἰδότες καὶ μὴ ἀναγκαζόμενοι. On the other hand, deliberation is not a necessary condition of voluntariness: on the contrary, Aristotle expressly denies that passion and emotion destroy the voluntariness of an action.

[3] *Eth.* iii. 3, 4, 1111, a, 24, b, 8. Will, however, in the stricter sense (see p. 114, n. 3, *supra*), cannot be attributed to either of them.

needs be voluntary.[1] It is in his view the intention upon which in the first instance the moral quality of an act depends.[2] In like manner deliberation is only possible with reference to those things which lie within our own power.[3] Aristotle, however, has not attempted to indicate more exactly the inner processes by which free volition operates, nor to solve all the difficulties which surround the doctrine of the Freedom of the Will. The

[1] *Eth.* iii. 4, 1111, b, 6: ἡ προαίρεσις δὴ ἑκούσιον μὲν φαίνεται, οὐ ταὐτὸν δέ, ἀλλ' ἐπὶ πλέον τὸ ἑκούσιον· τοῦ μὲν γὰρ ἑκουσίου καὶ παῖδες καὶ τἆλλα ζῷα κοινωνεῖ, προαιρέσεως δ' οὔ, καὶ τὰ ἐξαίφνης ἑκούσια μὲν λέγομεν, κατὰ προαίρεσιν δ' οὔ. 1112, a, 14: ἑκούσιον μὲν δὴ φαίνεται [ἡ προαίρεσις], τὸ δ' ἑκούσιον οὐ πᾶν προαιρετόν. (So also *Rhet. ibid.*: ὅσα μὲν οὖν ἑκόντες [sc. ποιοῦσιν], οὐ πάντα προαιρούμενοι, εἰδότες ἅπαντα.) Aristotle then further distinguishes προαίρεσις from ἐπιθυμία, θυμὸς, βούλησις (by which he here means *wish*, rather than *will* as it is directed towards what is impossible and beyond our power) and δόξα (or, more accurately, a certain kind of δόξα, e.g. right opinion upon what is right, what is to be feared, &c., and generally upon practical questions); its characteristic mark is deliberation (c. 5, 1113, a, 2: βουλευτὸν δὲ καὶ προαιρετὸν τὸ αὐτὸ, πλὴν ἀφωρισμένον ἤδη τὸ προαιρετόν· τὸ γὰρ ἐκ τῆς βουλῆς προκριθὲν προαιρετόν ἐστιν); accordingly, τὸ προαιρετὸν is defined as βουλευτὸν ὀρεκτὸν τῶν ἐφ' ἡμῖν, and προαίρεσις as βουλευτικὴ ὄρεξις τῶν ἐφ' ἡμῖν (*ibid.* l. 9 sq.); ἐκ τοῦ βουλεύσασθαι γὰρ κρίναντες ὀρεγόμεθα κατὰ τὴν βούλευσιν. The same description is repeated *Eth.* vi. 2, 1139, a, 23, cf. v. 10, 1135, b, 10 (προελόμενοι μὲν [πράττομεν] ὅσα προβουλευσάμενοι, ἀπροαίρετα δὲ ὅσα ἀπροβούλευτα). On the other hand, ὄρεξις in the narrower sense of mere irrational desire is said *De An.* iii. 11, 434, a, 12, cf. l. 5 sq., to be without part in τὸ βουλευτικόν.

[2] Τῷ γὰρ προαιρεῖσθαι τἀγαθὰ ἢ τὰ κακὰ ποιοί τινές ἐσμεν (*ibid.* c. 4, 1112, a, 1).

[3] Βουλευόμεθα δὲ περὶ τῶν ἐφ' ἡμῖν πρακτῶν, *ibid.* c. 5, 1112, a, 30. Aristotle further shows (1112, b, 11 sqq. vii. 9, 1151, a, 16) that deliberation deals, not with the end, but with the means. We set ourselves an end and then ask, just as in mathematical analysis, what are the conditions under which it may be attained; we next inquire what is required to create these conditions, and so on until we arrive by a process of analysis at the first condition of the desired result which lies in our power. With the knowledge of this condition, deliberation ceases; with the endeavour to realise it, action begins. Cf. TRENDELENBURG, *Histor. Beitr.* ii. 381 sq.; WALTER, *Lehre v. d. prakt. Vern.* 220 sq.

credit of first clearly perceiving these points belongs to the Stoics, while it has been left to modern philosophy fully to appreciate their force.

Before going on, however, to examine from the point of view of the Aristotelian Ethics the forms of activity which proceed from free self-determination, there are some anthropological questions which still demand investigation. These have been already touched upon, but only now admit of a complete survey.

As Aristotle recognises in the collective sphere of animate existence a progressive evolution to ever higher forms of life, so he regards the life of the human soul from the same point of view. Man unites in himself every form of life. To the nutritive life he adds the power of sensation and motion, and to these again the life of reason. Thought rises in him from sensation to memory and imagination, and thence to reflexion and the highest stage of the pure intuitions of the reason; action, from sensual desires, to rational will. He is capable not merely of perception and experience, but also of art and science. He raises himself in moral action above animal desire just as in the latter he transcends the merely vegetable processes of nutrition and propagation. Aristotle accordingly sums up his whole doctrine of the Soul in a single sentence: the Soul is in a certain sense all Actuality, inasmuch as it unites in itself the sensual and the spiritual, and thus contains the Form of both [1]—a description which applies especially, of course, to the soul of man. But just as we found it to be a defect in Plato's theory that he was

[1] See vol. i. p. 199, n. 2, *supra*.

unable to find any inner principle of unity in the three parts into which he had divided the soul, and that he undoubtedly failed to propound this problem with scientific accuracy,[1] so we have to regret in Aristotle a similar omission. The relation between the sensitive and nutritive life might itself have suggested the question whether the latter is an evolution from the former, or whether they come into existence simultaneously, and subsist side by side separate from one another. And where, if the latter be the case, are we to look for the connection between them and the unity of animal life? This difficulty, however, is still more pressing in reference to Reason and its relation to the lower faculties of the soul. Whether we regard the beginning, progress, or end of their union, everywhere we find the same unsolved dualism; nowhere do we meet with any satisfactory answer to the question[2] where we are to look for the unifying principle of personality—the one power which governs while it unites all the other parts of the soul.[3] The birth of the soul, speaking generally, coincides, according to Aristotle, with that of the body whose entelechy it is. He not only rejects any assumption of pre-existence, but he expressly declares that the germ of the life of the soul is contained in the male semen and passes with it from the begetter into the begotten.[4] But, on the other hand, he is unable to

[1] *Ph. d. Gr.* i. pp. 717 sq.

[2] Which Aristotle, however, does not forget to put to Plato; see p. 23, n. 1, *supra*.

[3] Even SCHELL's attempt (*Die Einheit des Seelenlebens aus d. Principien d. arist. Phil. entwickelt.* Freib. 1873) to prove the complete consistency of the Aristotelian doctrine is wholly unsuccessful. Detailed criticism of it may here be omitted without prejudice to the following investigation.

[4] See p. 10, n. 1, p. 6, n. 2, p. 53, n. 3, and p. 96, n. 1, *supra*.

apply this to the rational part of the soul, since that is something wholly different from the principle of life in the body. While, therefore, it is held that the germ of this also is propagated in the seed, it is yet asserted [1] at the same time that it alone enters man from without,[2] and is not involved in his physical life.[3] But how an immaterial principle which has absolutely nothing in common with the body and possesses no bodily organ can be said to reside in the semen and propagate itself through it, is wholly incomprehensible [4]—not to mention the fact that not one word is anywhere said of the time or manner of its entrance into it. Nor can this difficulty be met by the assumption that the Spirit proceeds direct from God,[5] whether we regard its origin as an event necessarily following the operation of natural laws, or as in each case the effect of a creative act of the Divine Will.[6] For the former view, which

[1] See p. 96, n. 1, 2, *supra*.

[2] It enters the womb, indeed, in the seed, but comes to the latter **θύραθεν**, as is clearly explained in the passages quoted, p. 96, n, 1, *Gen. An.* ii. 3, 736, b, 15 sqq.

[3] **Χωριστὸς** (*Gen. An.* ii. 3, 737, a, 9; *De An.* iii. 5; see p. 96, n. 1, and p. 98, n. 1, *sup.*), which here, as perhaps also in Plato's account of the Ideas, means not merely separable but actually separate, the equivalent phrase *οὐθὲν γὰρ αὐτοῦ τῇ ἐνεργείᾳ κοινωνεῖ σωματικὴ ἐνέργεια* being used for it, 739, a, 28.

[4] We cannot conceive of an immaterial being occupying a position in space, nor is the relation of the active force to the implement it employs, which is used to explain the union of soul and body (p. 3, n. 2, *supra*), applicable to the reason, which has no such implement. Cf. p. 94, n. 2, and p. 100, n. 2.

[5] BRANDIS, *Gr.-Röm. Phil.* ii. b. 1178.

[6] The latter view, that of the so-called 'creationists,' was not only generally assumed by mediæval Aristotelians as undoubtedly Aristotle's, but is accepted by BRENTANO, *Psychol. d. Ar.* 195 sqq., whom HERTLING, *Mat. und Form*, 170 (more cautiously also L. SCHNEIDER, *Unsterblichkeitslehre d. Arist.* 54 sq.), is inclined to follow. According to BREN., 'the spiritual part is created out of nothing by the immediate act

coincides more or less with the doctrine of Emanation, there is not only no support whatsoever in Aristotle's system, but it is wholly irreconcilable with his view of the unchangeable and transcendent nature of God.[1] The assumption, on the other hand, of the creation of the human spirit by the Deity conflicts with Aristotle's express and emphatic statement[2] that God does not interfere actively in the world by an exercise of will.[3] Aristotle says, moreover, as distinctly as possible, that the spirit is exempt from birth no less than from death, thus attributing to it pre-existence,[4] though in a certain impersonal sense. It was impossible, accordingly, that the question how and by whom it was produced at the birth of the body should have even been raised by him. Even upon the only question that could arise—the question regarding the causes which determine the spirit's union with a human body, and with *this* particular body in each particular case, and regarding the way in which this union takes place—Aristotle's writings contain not a single word; whether it be that this question never suggested itself to him, or that he

of God, and at the same time the character of a human body is given to the material part' (p. 199); the reason is produced by God from nothing at the moment at which the fœtus in its natural development reaches the last stage (which, according to n. 2, preceding page, must be at a point of time previous at any rate to the procreative act); see also p. 203.

[1] Cf. also i. 413 sqq. Still less of course can we, with GROTE (*Arist.* ii. 220, 230), regard the absolutely immaterial spirit to be an effluence from the æther, the *θεῖον σῶμα*.

[2] On which see i. 399 sq.

[3] As is rightly remarked also by BIEHL (*Ueb. d. Begriff νοῦς b. Arist.* Linz, 1864; *Gymn.-Progr.* p. 9).

[4] Cf. the passages quoted, p. 96, n. 1, and p. 101, n. 2, *sup.* The obvious meaning of these passages cannot justly be set aside upon the general grounds advocated by BRENTANO, p. 196 sq., which find no support either in the psychology of Aristotle or in

regarded it as insoluble and preferred to leave it alone.[1] Nor is he more explicit with regard to the question of the origin of the 'Passive Reason,' whose existence is said to begin and end with that of the body.[2] Although we should naturally assume that he regards it as the outcome of the union of the active spirit with the faculty of reproductive imagination, yet he gives us no hint to help us to form a definite conception of its origin.[3]

If we further examine the union in man of different faculties, we find it difficult to understand how in one being two parts can be united, of which the one is exposed to passive states, the other incapable of passivity; the former bound up with the body, the latter without a physical organ. Does Reason, we may ask, participate in the physical life and the mutation of the lower faculties, or do the latter participate in the immutability and impassiveness of Reason? We might find support for both assumptions in Aristotle's writings, yet each in turn can be shown to be inconsistent with the presuppositions of his philosophy. On the

any rightly interpreted statement to be found in his texts.

[1] The words, *Gen An.* ii. 3, 736, b, 5, to which BRENTANO, 195, calls attention, point rather to this: *διὸ καὶ περὶ νοῦ, πότε καὶ πῶς μεταλαμβάνει καὶ πόθεν τὰ μετέχοντα ταύτης τῆς ἀρχῆς, ἔχει τ' ἀπορίαν πλείστην καὶ δεῖ προθυμεῖσθαι κατα δύναμιν λαβεῖν καὶ καθόσον ἐνδέχεται.*

[2] Cf. p. 98, n. 2.

[3] SCHLOTTMANN (*Das Vergängliche und Unvergängliche in d. menschl. Seele nach Arist.* Halle, 1873, p. 46 sq.) supposes the passive reason to be a radiation of the active on its entry into the body. This assumption, however, finds no support in any statement of Aristotle or in his system as a whole. According to Aristotelian principles, the reason, like all immaterial and unmoved being, can promote the development of other things by solicitation, but cannot develop anything else from itself.

one hand, in his account of 'Passive Reason'[1] the qualities of the perishable parts of the soul are transferred to Reason; while, on the other hand, just as immaterial Form in general or the motive power as such is said to be itself unmoved,[2] so Aristotle denies movement and change not only to Reason, but also to the Soul in general.[3] The conception of the Passive Reason, in fact, concentrates in itself all the contradictions we are at present considering.[4] The motionless-

[1] See p. 96 sqq. *supra*.

[2] See the passage already quoted, p 5, from *De An.* i. 3, 4. Aristotle opens the discussion at the beginning of c. 3 with the explanation that not only is it not true to say that the soul can, from its nature, be an ἑαυτὸ κινοῦν, ἀλλ' ἕν τι τῶν ἀδυνάτων τὸ ὑπάρχειν αὐτῇ κίνησιν. Of the arguments by which this is proved, the first (406, a, 12) is to Aristotle completely convincing: τεσσάρων δὲ κινήσεων οὐσῶν, φορᾶς, ἀλλοιώσεως, φθίσεως, αὐξήσεως, ἢ μίαν τούτων κινοῖτ' ἂν ἢ πλείους ἢ πάσας. εἰ δὲ κινεῖται μὴ κατὰ συμβεβηκὸς, φύσει ἂν ὑπάρχοι κίνησις αὐτῇ. εἰ δὲ τοῦτο καὶ τόπος· πᾶσαι γὰρ αἱ λεχθεῖσαι κινήσεις ἐν τόπῳ. εἰ δ' ἐστὶν ἡ οὐσία τῆς ψυχῆς τὸ κινεῖν ἑαυτὴν, οὐ κατὰ συμβεβηκὸς αὐτῇ τὸ κινεῖσθαι ὑπάρχει. After proving in detail how impossible it is that the soul should move, and especially that it should move in space, Aristotle returns, c. 4, 408, a, 30, once more to the original question and declares that it is impossible that the soul should be self-moving; it can move and be moved only κατὰ συμβεβηκὸς, οἷον κινεῖσθαι μὲν ἐν ᾧ ἐστὶ, τοῦτο δὲ κινεῖσθαι ὑπὸ τῆς ψυχῆς· ἄλλως δ' οὐχ οἷόν τε κινεῖσθαι κατὰ τόπον αὐτήν. It might, indeed, appear that it moves itself. φαμὲν γὰρ τὴν ψυχὴν λυπεῖσθαι χαίρειν θαρρεῖν φοβεῖσθαι, ἔτι δὲ ὀργίζεσθαί τε καὶ αἰσθάνεσθαι καὶ διανοεῖσθαι· ταῦτα δὲ πάντα κινήσεις εἶναι δοκοῦσιν. ὅθεν οἰηθείη τις ἂν αὐτὴν κινεῖσθαι· τὸ δ' οὐκ ἔστιν ἀναγκαῖον . . . βέλτιον γὰρ ἴσως μὴ λέγειν τὴν ψυχὴν ἐλεεῖν ἢ μανθάνειν ἢ διανοεῖσθαι, ἀλλὰ τὸν ἄνθρωπον τῇ ψυχῇ. τοῦτο δὲ μὴ ὡς ἐν ἐκείνῃ τῆς κινήσεως οὔσης, ἀλλ' ὁτὲ μὲν μέχρι ἐκείνης, ὁτὲ δ' ἀπ' ἐκείνης, οἷον ἡ μὲν αἴσθησις ἀπὸ τωνδὶ [it is a motion which proceeds from the senses to the soul], ἡ δ' ἀνάμνησις ἀπ' ἐκείνης ἐπὶ τὰς ἐν τοῖς αἰσθητηρίοις κινήσεις ἢ μονάς. *Phys.* vii. 3, 246, b, 24, shows with reference to the higher faculties that neither virtue and vice on the one hand, nor thought on the other, can be said to be an ἀλλοίωσις of the soul, although they are produced by an ἀλλοίωσις. Cf. p. 94, n. 2.

[3] Cf. i. 386, n. 1, and i. 359, n. 1, *supra*.

[4] See p. 103 sq. *supra*.

ness of the lower faculties of the soul is contradicted among other things [1] by what has just been said about the characteristic difference between them and Reason. For how can they be susceptible of impression when they are wholly excluded from movement and change, seeing that every impression involves a change? [2]

Where, finally, are we to look in this union of heterogeneous parts for that centre of equilibrium of the soul's life, which we call Personality? It cannot reside, it would seem, in Reason, for this is the permanent universal element in man which is unaffected by the changing conditions of individual life; it is not born, and it does not die; it is free from all suffering and change; it is subject to no failure or error; neither love nor hate nor memory nor even intellectual activity [3] belongs to it, but only to the man in whom it resides. [4] Neither can Personality lie in the lower faculties of the soul. For, on the one hand, Aristotle, as we have just seen, combats the view that these are subject to motion, and finds the proper subject of the changing states of feeling and even of intelligent thought, not in the soul itself, but in the union of both soul and body in man. On the other hand, he asserts that the essence of each

[1] As, for instance, the passage quoted, p. 109, n. 5, according to which, in desire, the appetitive part of the soul is both mover and moved, the *ζῷον* is only moved; and the description of sensation, p. 58, n. 4.

[2] See i. 454, n. 2, 3.

[3] *Διάνοια* in the sense of discursive thought as explained, p. 106, n. 2.

[4] Besides the passages quoted, p. 99, n. 3, and p. 124, n. 2, *supra*, cf. *De An.* iii. 10, 433, a, 26: *νοῦς μὲν οὖν πᾶς ὀρθός*, but especially *De An.* i. 4, 408, b, 24: *καὶ τὸ νοεῖν δὴ καὶ τὸ θεωρεῖν μαραίνεται ἄλλου τινὸς ἔσω φθειρομένου, αὐτὸ δὲ ἀπαθές ἐστιν* (see p. 96, n. 2, *supra*). *τὸ δὲ διανοεῖσθαι καὶ φιλεῖν ἢ μισεῖν οὐκ ἔστιν ἐκείνου πάθη, ἀλλὰ τουδὶ τοῦ ἔχοντος ἐκεῖνο, ᾗ ἐκεῖνο ἔχει. διὸ καὶ τούτου φθειρομένου οὔτε μνημονεύει οὔτε*

individual is his reason,[1] by which he understands, not thought alone, but every kind of intellectual apprehension.[2] And if he refuses to acknowledge the soul as the subject of emotion, he is not likely to find it in the body.[3] The most serious difficulty, however, arises in connection with his theory of the Will. Will cannot belong to Reason as such, for Reason taken in itself is not practical but theoretical. Even practical thought is sometimes regarded by Aristotle as a function of a different faculty from theoretic.[4] Movement and action, in fact, come from desire, which in turn is excited by imagination.[5] Desire, again, can cause movement, but not rational movement,[6] for it belongs to animals as well

φιλεῖ· οὐ γὰρ ἐκείνου ἦν, ἀλλὰ τοῦ κοινοῦ, ὃ ἀπόλωλεν.

[1] *Eth.* x. 7, 1178, a, 2: δόξειε δ' ἂν καὶ εἶναι ἕκαστος τοῦτο [*i.e.* νοῦς] εἴπερ τὸ κύριον καὶ ἄμεινον. ix. 4, 1166, a, 16, 22: τοῦ διανοητικοῦ χάριν ὅπερ ἕκαστος εἶναι δοκεῖ . . . δόξειε δ' ἂν τὸ νοοῦν ἕκαστος εἶναι ἢ μάλιστα. c. 8, 1168, b, 28: the good man might be said to be pre-eminently φίλαυτος, seeing that love of the most essential (κυριώτατον) part of himself predominates in all he does. ὥσπερ δὲ καὶ πόλις τὸ κυριώτατον μάλιστ' εἶναι δοκεῖ καὶ πᾶν ἄλλο σύστημα, οὕτω καὶ ἄνθρωπος . . . καὶ ἐγκρατὴς δὲ καὶ ἀκρατὴς λέγεται τῷ κρατεῖν τὸν νοῦν ἢ μή, ὡς τούτου ἑκάστου ὄντος· καὶ πεπραγέναι δοκοῦσιν αὐτοὶ καὶ ἑκουσίως τὰ μετὰ λόγου μάλιστα.

[2] See p. 93, n. 5, *supra*.

[3] *Eth.* x. 2, 1173, b, 10: if pleasure is an ἀναπλήρωσις, the body must be that which feels pleasure, but this is not the case.

[4] *Eth.* vi. 2; see p. 113, n. 2, *supra*.

[5] See the passages from *Eth.* vi. 2, 1139, a, 35, already employed, p. 113 sq.: διάνοια δ' αὐτὴ οὐθὲν κινεῖ, ἀλλ' ἡ ἕνεκά του καὶ πρακτική. *De An.* iii. 10, 433, a, 22: ὁ μὲν νοῦς οὐ φαίνεται κινῶν ἄνευ ὀρέξεως. c. 9, 432, b, 26: ἀλλὰ μὴν οὐδὲ τὸ λογιστικὸν καὶ ὁ καλούμενος νοῦς ἐστιν ὁ κινῶν· ὁ μὲν γὰρ θεωρητικὸς οὐθὲν νοεῖ πρακτόν, οὐδὲ λέγει περὶ φευκτοῦ καὶ διωκτοῦ οὐθέν, ἡ δὲ κίνησις ἢ φεύγοντός τι ἢ διώκοντός τί ἐστιν. ἀλλ' οὐδ' ὅταν θεωρῇ τι τοιοῦτον, ἤδη κελεύει φεύγειν ἢ διώκειν . . . ἔτι καὶ ἐπιτάττοντος τοῦ νοῦ καὶ λεγούσης τῆς διανοίας φεύγειν τι ἢ διώκειν οὐ κινεῖται ἀλλὰ κατὰ τὴν ἐπιθυμίαν πράττει, οἷον ὁ ἀκρατής. καὶ ὅλως ὁρῶμεν ὅτι ὁ ἔχων τὴν ἰατρικὴν οὐκ ἰᾶται, ὡς ἑτέρου τινὸς κυρίου ὄντος τοῦ ποιεῖν κατὰ τὴν ἐπιστήμην, ἀλλ' οὐ τῆς ἐπιστήμης.

[6] *De An.* iii. 9 *fin.*, after the passage just quoted: ἀλλὰ μὴν οὐδ' ἡ ὄρεξις ταύτης κυρία τῆς κινή-

as man, whereas the Will belongs to man alone.[1] Both Reason and Desire must therefore enter into Will as constituent parts.[2] But in which of these two the essence of the Will or the power of free self-determination resides, it is hard to say. On the one hand, the power of controlling desire is attributed to Reason, which is defined as the motive force, or more accurately the source from which the resolutions of the will proceed:[3] and immorality is treated as a perversity of Reason.[4] On the other hand, it is asserted that Reason initiates

σεως· οἱ γὰρ ἐγκρατεῖς ὀρεγόμενοι καὶ ἐπιθυμοῦντες οὐ πράττουσιν ὧν ἔχουσι τὴν ὄρεξιν, ἀλλ' ἀκολουθοῦσι τῷ νῷ.

[1] Cf. p. 114, n. 3, and p. 117, n. 3.

[2] See p. 114, n 3, and *Eth.* vi. 2, 1139, a, 33: διὸ οὔτ' ἄνευ νοῦ καὶ διανοίας οὔτ' ἄνευ ἠθικῆς ἐστὶν ἕξεως ἡ προαίρεσις. b, 4: διὸ ἢ ὀρεκτικὸς νοῦς ἡ προαίρεσις ἢ ὄρεξις διανοητικὴ καὶ ἡ τοιαύτη ἀρχὴ ἄνθρωπος. If, in opposition to the above view, it be said that the will belongs to ὄρεξις, which is regarded by Aristotle as a separate part of the soul (SCHRADER, *Arist. de Volunt. Doctr.* 12), this cannot be admitted. Aristotle himself states clearly enough that reason is an element of will, but reason is essentially different from the animal soul to which ὄρεξις belongs.

[3] Aristotle frequently says that the command in the soul belongs by nature to the reason. It is κύριον in it (*Eth.* x. 7, ix. 8; see p 126, n. 1, *supra*); it has no superior (*De An.* i. 5, 410, a, 12: τῆς δὲ ψυχῆς εἶναί τι κρεῖττον καὶ ἄρχον, ἀδύνατον· ἀδυνατώτερον δ' ἔτι τοῦ νοῦ). Desire, on the other hand, must obey the reason (*Polit.* i. 5: ὁ δὲ νοῦς [ἄρχει] τῆς ὀρέξεως πολιτικὴν καὶ βασιλικὴν [ἀρχήν]. *De An.* iii. 9, v. 598, 5 above: ἐπιτάττοντος τοῦ νοῦ. *Eth.* i. 13: the ὀρεκτικὸν partakes of λόγος, ᾗ κατήκοόν ἐστιν αὐτοῦ καὶ πειθαρχικόν, similarly *Polit.* vii. 14, v. p. 588; λόγος, however, resides only in the reason), and this obedience it is which constitutes the difference between the ἐγκρατὴς and the ἀκρατὴς (*De An.* iii. 9, see p. 126, n. 6). In *Eth.* iii. 5, 1113, a, 5 (παύεται γὰρ ἕκαστος ζητῶν πῶς πράξει, ὅταν εἰς αὑτὸν ἀναγάγῃ τὴν ἀρχὴν [sc. τῆς πράξεως when he is convinced that the action depends only on himself] καὶ αὑτοῦ [this is the partitive genitive] εἰς τὸ ἡγούμενον· τοῦτο γὰρ τὸ προαιρούμενον), we must understand by τὸ ἡγούμενον the reason, not (as WALTER, *Lehre v. d. prakt. Vernunft*, 222 sqq. prefers to take it) 'the harmonious union of reason and endeavour,' 'the man as a whole, which could not be called the governing part of the man.

[4] *Eth.* vii. 7, 1150, a, 1 sqq. c. 9, 1151, a, 17 sq.

no movement and is perfect and infallible.[1] But if Reason cannot err, it cannot be the seat of the Will, to which belong the doing of good and the doing of evil. Where Aristotle actually supposes this to reside, it is impossible to say. He is clearly drawn in opposite directions by opposite considerations between which he is unable to take up any decided position. His high conception of the nature of the spiritual element in man forbids him to implicate Reason in the life of the body, or to attribute to it error and immorality; on the other hand, it is to Reason alone that the reins of government in the soul can be committed. But the two elements are in reality inseparable, and in deducing only what is good in our actions from Reason, while limiting to the lower faculties of the soul all that is faulty, every act which has for its object what is divisible and corporeal, all change in act or state, he breaks up human nature into two parts between which no living bond of connection can be discovered.[2] Similar difficulties would

[1] Cf. on the former head, p. 126, n. 5, on the second, *De An.* iii. 10 (p. 125, n. 4), and p. 197, n. 4, *supra*. *Eth.* i. 13, 1102, b, 14: *τοῦ γὰρ ἐγκρατοῦς καὶ τοῦ ἀκρατοῦς τὸν λόγον καὶ τῆς ψυχῆς τὸ λόγον ἔχον ἐπαινοῦμεν· ὀρθῶς γὰρ καὶ ἐπὶ τὰ βέλτιστα παρακαλεῖ*—so that in incontinence the mistake does not lie with the rational part of the soul; *ibid.* ix. 8, 1169, a, 17: *πᾶς γὰρ νοῦς αἱρεῖται τὸ βέλτιστον ἑαυτῷ, ὁ δ' ἐπιεικὴς πειθαρχεῖ τῷ νῷ*, where virtue is said to consist in the subordination of the higher portions of the soul to the reason, which in its turn always chooses the right.

[2] The difficulty remains even although we assume with BRANDIS (iii. a, 105 sq. ii. b, 1042 sq.) that freedom, according to Aristotle, consists 'in the spirit's faculty of self-evolution in accordance with its own fundamental nature.' For we may ask to which part of the soul this evolution belongs? The active reason cannot certainly evolve itself, for it is unchangeable; nor can the appetitive and sensitive exhibit free self-evolution, being always determined by something else; only where there is reason do we find free activity. Lastly, the Passive Reason, which is the only other

have arisen in regard to self-consciousness had Aristotle gone deeper into this aspect of the question. But just his failure to do so or to raise the question in the form in which it now presents itself to us, as to what it is that constitutes the permanent self amid our changing acts and states,[1] shows more clearly than anything else how imperfectly he grasped the problem of the unity of the personal life.

Now, if reason enters man from without, and if its union with the other faculties of his soul, and with the

alternative, is open to the same charge of indefiniteness and contradiction; we cannot find any definite place for it between reason and sense. The above definition of freedom is more like Leibnitz's than Aristotle's. Here also, as in the case already discussed i. 413, *supra*, sq., BRANDIS seems to find too close a resemblance between Aristotelian and modern German doctrines. The argument upon which he chiefly relies for the above view is that, if self-determination has its seat in the governing part of our nature, and therefore in the spirit, and if further the spirit is the essence of a man, we may conclude that it must develop by free self-determination according to its original character as individual essence. But spirit or reason constitutes, according to Aristotle, only one side of the will; its reference to sense is as essential an element. Will is not pure reason, but rational desire. And even were it not so, if will were exclusively an exercise of reason, we could only conclude that it is as incapable of evolution as of error, for according to Aristotle's expressed opinion change and evolution are confined to the sphere of sensation or even more strictly to the body. It is difficult, therefore, to say *what* Aristotle regarded as the seat of the freedom of the will.

[1] He remarks, indeed, that we are conscious of every form of our activity as such, and therefore of our own existence. *Eth.* ix. 9, 1070, a, 29: ὁ δ' ὁρῶν ὅτι ὁρᾷ αἰσθάνεται καὶ ὁ ἀκούων ὅτι ἀκούει καὶ ὁ βαδίζων ὅτι βαδίζει, καὶ ἐπὶ τῶν ἄλλων ὁμοίως ἔστι τι τὸ αἰσθανόμενον ὅτι ἐνεργοῦμεν, ὥστε αἰσθανοίμεθ' ἂν ὅτι αἰσθανόμεθα καὶ νοοῖμεν ὅτι νοοῦμεν. τὸ δ' ὅτι αἰσθανόμεθα ἢ νοοῦμεν, ὅτι ἐσμέν· τὸ γὰρ εἶναι ἦν αἰσθάνεσθαι ἢ νοεῖν); This consciousness, however, he regards as immediately given with the activity in question. In perception it has its seat in the *sensus communis* (see p. 69, n. 3). How the identity of self-consciousness in the different activities which he refers to different parts and faculties of the soul is to be explained he does not inquire.

body, continues throughout to be merely an external one, we cannot but expect that a union which begins in time will also end in time.[1] Upon this point, Aristotle holds with Plato that there is a mortal and also an immortal part in the soul. These unite together at the beginning of the earthly life, and separate from one another again at its close. In the further development, moreover, of this thought he at first closely followed Plato. In his earlier writings he enunciated the Platonic doctrines of the pre-existence of the soul, its incarceration in the body, and its return at death to a higher existence.[2] He therefore assumed the continued personality and self-conscious existence of the individual after death, although he failed, like Plato, fully to investigate the question how far this doctrine was consistent with the presuppositions of the Platonic philosophy.[3] With the independent development of his own system, however, he was necessarily led to question these assumptions. As he came to conceive of body and soul as essentially united, and to define the soul as the entelechy of the body, and as, further, he became convinced that every soul requires its own proper organ, and must remain wholly inoperative without it, he was necessarily led, not only to regard the pilgrimage of the soul in the other world as a myth, but also to question the doctrines of pre-existence and immortality as they were held by Plato.[4] Inasmuch as

[1] Aristotle's doctrine of immortality is discussed by SCHRADER, *Jahrb. f. Philologie*, vol. 81 and 82 (1860), H. 2, p. 89–104; Leonh. SCHNEIDER, *Unsterblichkeitslehre d. Aristot.* (Passau, 1867), p. 100 sqq.

[2] The references on this subject have already been given. Cf. BERNAYS, *Dial. d. Arist.* 21 sqq. 143 sqq.

[3] On which cf. *Ph. d. Gr.* i. 717 sq.

[4] Cf. p. 10, *supra*.

the soul is dependent upon the body for its existence and activity, it must come into existence and perish with it. Only incorporeal spirit can precede and outlast the bodily life. But this, according to Aristotle, is to be found only in the reason and in that part of it which is without taint of the lower activities of the soul—namely, the Active Nous. Neither the sensitive nor the nutritive life can exist without the body. These come into existence in and with it, and can no more be conceived of apart from it than walking apart from feet.[1] Even Passive Reason is transitory, like everything else which is subject to impression and change. The Active Reason alone is eternal and imperishable; it alone is not only separable, but in its very nature absolutely separated from the body.[2] But what now is the active reason which thus alone outlives death? It is the universal as distinguished from the individual element in man. All personal forms of activity, on the other hand, are referred either to the lower faculties of the soul, or to the whole, which is made up of soul and body, and which at death ceases to be. If we think of reason as separate from the body, we must exclude from it love and hate, memory and intelligent thought;[3] likewise, of course, all

[1] See p. 6, n. 1, and p. 96, n. 1, *supra*.

[2] See p 98, n. 1, *supra*, and *Metaph*. xii. 3, 1070, a, 24: *εἰ δὲ καὶ ὕστερόν τι ὑπομένει* [whether anything remains after the dissolution of the constituent parts of a composite substance] *σκεπτέον· ἐπ' ἐνίων γὰρ οὐθὲν κωλύει, οἷον εἰ ἡ ψυχὴ τοιοῦτον, μὴ πᾶσα ἀλλ' ὁ νοῦς· πᾶσαν γὰρ ἀδύνατον ἴσως.*

[3] See on this point the passages cited on pp. 125, n. 4, and 101, n. 3, *De An.* i. 4, 408, a, 24 sqq. iii. 5, 430, a, 22. In the first of these passages *διανοεῖσθαι, φιλεῖν, μισεῖν, μνημονεύειν* are expressly denied of reason, and the statement that these belong in any sense to a rational being

affections, together with the feelings of pleasure and pain, all of which belong to the sphere of the sensitive life; and since even will depends for existence upon the union of Reason with Desire, it also must perish with the lower parts of the soul.[1] Spirit or thought Aristotle doubtless conceived of as surviving death, and since it realises itself only in the activity of thought, this activity also must remain untouched by death, as it is held to be proof against old age.[2] But of the way in which we are to think of this continuance of thought after its separation from the body and the lower faculties of the soul Aristotle gives us no hint whatever. Even thought is impossible without the aid of pictorial imagination,[3] which cannot be said to exist in any intelligible sense after the death of the sentient soul. And when the body, which the soul as individual presupposes;[4] when perception, imagination, memory, reflexion; when the feelings of pleasure and pain, the

is qualified by the addition: *διὸ καὶ τούτου φθειρομένου οὔτε μνημονεύει οὔτε φιλεῖ. οὐ γὰρ ἐκείνου ἦν, ἀλλὰ τοῦ κοινοῦ, ὃ ἀπόλωλεν.* With regard to the second, it has already been remarked, p. 101, n. 2, *sup.*, that the words *οὐ μνημονεύομεν δὲ* refer in the first instance, indeed, to the failure to remember the existence out of time of the Nous anterior to its life in time, but that what is true of the present life in relation to an anterior one must be equally true of the future life in relation to the present. Since memory (according to p. 70 sq.) is an attribute of the sensitive soul and depends upon the bodily organs, and since without the passive reason, which perishes at death, no individual thought is possible (p. 101, n. 3), it is obvious that neither can survive death. SCHLOTTMANN'S explanation (p. 50 of the work mentioned p. 123, n. 3, *supra*), according to which the words *οὐ μνημονεύομεν*, &c. refer to the continuous activity of the *νοῦς ποιητικὸς* in the present life as an unconscious one, is consistent neither with the connection in which they stand nor with the meaning which is constantly attached to *μνημονεύειν* in Aristotelian phraseology.

[1] Cf. p. 109, n. 1, 2, and p. 126 sq.

[2] See p. 96, n. 2. *supra*.

[3] See p. 108, n. 2, *supra*.

[4] Cf. i. 369 sq., *supra*.

emotions, the desires and the will; when, finally, the whole being compounded of the union of soul and body has ceased as a whole to be, we are at a loss to see where that solitary remnant which he calls spirit can still reside, and how we can still speak of any personal life at all.[1] And, indeed, Aristotle himself in expressly rejecting the idea that the dead can be happy, and in comparing their state to the loss of all sense,[2]

[1] Even BRENTANO'S *Psychol. d. Arist.* 128 sq. fails to find a satisfactory answer to this question; while maintaining that the soul must remain an individual entity after its separation from the body, he yet admits that it is no longer a 'complete substance,' repeating the statement, p. 196 sq. But how a man can be the same person when he is no longer the 'perfect substance' which he is in the present life, it is difficult to see: not to mention that the contradiction of an 'imperfect substance.' finds no place in Aristotle's system.

[2] *Eth.* iii. 4, 1111, b, 22 (*βούλησις δ' ἐστὶ τῶν ἀδυνάτων, οἷον ἀθανασίας*) is not here in point, as *ἀθανασία* must be understood to mean here, not immortality after death, but immunity from death, deathlessness. *Ibid.* c. 11, 1115, a, 26: the discussion is merely of the common opinion. On the other hand, *Eth.* i. 11 is of importance for our question. Aristotle here asks whether the dead can be happy, and replies (1100, a, 13): *ἢ τοῦτό γε παντελῶς ἄτοπον ἄλλως τε καὶ τοῖς λέγουσιν ἡμῖν ἐνέργειάν τινα τὴν εὐδαιμονίαν; εἰ δὲ μὴ λέγομεν τὸν τεθνεῶτα εὐδαίμονα μηδὲ Σόλων τοῦτο βούλεται* &c., obviously implying that the dead are incapable of any activity. He says, indeed, in the passage that follows: *δοκεῖ γὰρ εἶναί τι τῷ τεθνεῶτι καὶ κακὸν καὶ ἀγαθὸν, εἴπερ καὶ τῷ ζῶντι μὴ αἰσθανομένῳ δέ*, and p. 1101, b, 1: *ἔοικε γὰρ ἐκ τούτων, εἰ καὶ διϊκνεῖται πρὸς αὐτοὺς ὁτιοῦν, εἴτ' ἀγάθὸν εἴτε τοὐναντίον, ἀφαυρόν τι καὶ μικρὸν ἢ ἁπλῶς ἢ ἐκείνοις εἶναι, εἰ δὲ μὴ, τοσοῦτόν γε καὶ τοιοῦτον ὥστε μὴ ποιεῖν εὐδαίμονας τοὺς μὴ ὄντας* [those who are not so] *μηδὲ τοὺς ὄντας ἀφαιρεῖσθαι τὸ μακάριον.* His meaning, however, cannot here be that the dead have a feeling of happiness or unhappiness which is increased by the prosperity or misfortune of posterity (which is the subject under discussion). This is even expressly denied and would be wholly inconsistent with the rest of Aristotle's teaching. He is here speaking of the æsthetic estimate of human life, the question being how far the picture of happiness with which the life of a man presents us is altered by the light or shade cast upon it by the fortunes of his descendants, just as (1100, a, 20) by the honour or disgrace which follow himself after death. How remote is an actual, personal immortality from Aristotle's thought is

seems to deny the existence of any such remnant. Under these circumstances it is impossible to say that Aristotle taught a doctrine of personal immortality.[1] He taught merely the continued existence of thinking spirit, denying to it all the attributes of personality, and never explaining nor apparently even raising the question, how far this spirit can still be regarded as belonging to an individual, as incorporeal reason, in spite of its eternity and impassivity, certainly is.[2] In this omission we have only another instance of that defect which, taking its rise in the Platonic school, permeates the whole of Aristotle's Anthropology. Just as his Metaphysics gives us no clear and consistent account of Individuality, so his Psychology fails with regard to Personality. As he there left it undetermined whether the ground of individual existence lies in Matter or in Form, so here we are left in the dark as to whether Personality resides in the higher or in the lower faculties of the soul, in the immortal or in the mortal part of our nature. We are left to conclude that each of these alternatives involves difficulties which Aristotle has done nothing to remove, and which, there-

obvious also from *Eth.* ix. 8, 1169, a, 18. The good man, he there says, will do much for his friends and country, *κἂν δέῃ ὑπεραποθνήσκειν . . . ὀλίγον γὰρ χρόνον ἡσθῆναι σφόδρα μᾶλλον ἕλοιτ' ἂν ἢ πολὺν ἠρέμα, καὶ βιῶσαι καλῶς ἐνιαυτὸν ἢ πόλλ' ἔτη τυχόντως, καὶ μίαν πρᾶξιν καλὴν καὶ μεγάλην ἢ πολλὰς καὶ μικράς. τοῖς δ' ὑπεραποθνήσκουσι τοῦτ' ἴσως συμβαίνει. αἱροῦνται γὰρ μέγα καλὸν ἑαυτοῖς.* Besides the inherent worth of the noble deed Plato would certainly have referred in such a case to the recompense in the next life; in Aristotle there is no trace of any such conception. The same is true of *Eth.* iii. 12, 1117, b, 10: *ὅσῳ ἂν μᾶλλον τὴν ἀρετὴν ἔχῃ πᾶσαν καὶ εὐδαιμονέστερος ᾖ, μᾶλλον ἐπὶ τῷ θανάτῳ λυπηθήσεται· τῷ τοιούτῳ γὰρ μάλιστα ζῆν ἄξιον, καὶ οὗτος μεγίστων ἀγαθῶν ἀποστερεῖται εἰδώς.*

[1] SCHRADER, *ibid.* 101 sq.

[2] See p. 99, n. 5, *supra.*

fore, we cannot doubt he failed himself to observe. Reason as such or Pure Spirit cannot, it would appear, be the seat of Personality, since it is the eternal, universal, and immutable element in man. It is untouched by birth and death, and by the changes of the temporal life. It abides immutably within the circle of its own life, without receiving impressions from without or passing any part of its activity beyond itself. To the sphere of sense, on the other hand, are assigned all multiplicity and movement, all interchange between the world and man, all mutation and evolution—in a word, all that is definite and living in personal existence. Yet the personality and free self-determination of a rational being cannot be said to reside in the sensitive part of his nature. Wherein does it, then, reside? To this question Aristotle has no answer; for just as Reason, on his view, enters the sensitive soul at birth from without and leaves it again at death, so during life also there is lacking any inner unity between the two. And what is said about the Passive Reason and the Will is wholly unfitted, on account of its vagueness and uncertainty, to afford any scientific principle that can mediate between the heterogeneous parts of the human soul.

# CHAPTER XII

## PRACTICAL PHILOSOPHY

### *A.—Ethics*

HITHERTO we have had for our aim the investigation of the knowledge of reality as such. We have now to deal with an activity to which knowledge serves only as a means. This consists either in production or in action.[1] The scientific investigation of the latter Aristotle embraces under the general name of Politics,[2] distinguishing, however, between Politics proper, or the doctrine of the State, and Ethics,[3] which naturally

[1] See i. 181, n. 3, *supra*, and upon the method of this science, i. 168, n. 2, *supra*. That it has not to do, however, merely with practical interests is obvious among other passages from *Polit.* iii. 8 *init.*: δεῖ δὲ μικρῷ διὰ μακροτέρων εἰπεῖν τίς ἑκάστη τούτων τῶν πολιτειῶν ἐστίν· καὶ γὰρ ἔχει τινὰς ἀπορίας, τῷ δὲ περὶ ἑκάστην μέθοδον φιλοσοφοῦντι καὶ μὴ μόνον ἀποβλέποντι πρὸς τὸ πράττειν οἰκεῖόν ἐστι τὸ μὴ παρορᾶν μηδέ τι καταλείπειν, ἀλλὰ δηλοῦν τὴν περὶ ἕκαστον ἀλήθειαν. While, therefore, practical philosophy *qua* practical has to do with action, *qua* philosophy it has the scientific interest of pure knowledge.

[2] See i. 187, *supra*. Practical philosophy is also called ἡ περὶ τἀνθρώπινα φιλοσοφία, *Eth.* x. 10, 1181, b, 15.

[3] The common view of the relation between them, which was adopted i. 187, viz. that Ethics treats of the moral activity of the individual, Politics of the State, cannot, even in view of what NICKES, *De polit. Arist. Libr.* p. 5 sq., and BRANDIS, p. 1335, remark, be admitted to be wrong. Aristotle certainly distinguishes (*Eth.* x. 10) between the two parts of Politics on the ground that the second deals with the means by which the knowledge of virtue acquired in

precedes it. Turning to the latter, we must ask first how the End of all human action is defined by Aristotle. We shall then proceed to his account of the nature of Moral Activity and of the particular Virtues; passing thence with him to the discussion of Friendship, which forms the link between Ethics and Politics.[1]

the first is applied to life, and he proves the necessity of this further investigation on the ground that discussions (or knowledge, λόγοι) are not able of themselves to make men virtuous. Accordingly, *Ethics* and *Politics* may be said to be related to one another as the pure and the applied part of one and the same science. But as those means are to be found, according to Aristotle, only in the life of the community, upon which the *Ethics* (as an account of moral activities as such) does not further enter, the above description corresponds to the actual relation in which the works stand to one another. Even Aristotle, moreover, distinguishes (*Eth.* vi. 8, 1141, b, 23) between two kinds of practical knowledge: that which refers to the individual, and that which refers to the community. ἔστι δὲ, he says, καὶ ἡ πολιτικὴ καὶ ἡ φρόνησις ἡ αὐτὴ μὲν ἕξις, τὸ μέντοι εἶναι οὐ ταὐτὸν αὐταῖς, and after distinguishing the different departments of politics (τῆς περὶ πόλιν, sc. ἐπιστήμης) he continues: δοκεῖ δὲ καὶ φρόνησις μάλιστ' εἶναι ἡ περὶ αὐτὸν καὶ ἕνα. While, however, φρόνησις is knowledge in relation to moral conduct, ethics is simply the account of the principles which φρόνησις establishes. Eudemus (*v.* i. 186, n. 4, *supra*) accordingly calls it by this name. —It is not true that the *Magna Moralia* subordinates politics to ethics (BRANDIS, *ibid.*): the latter is there described at the very outset as a μέρος τῆς πολιτικῆς, it being added that the subject as a whole should be called, not ethics, but politics. When NICKES, *ibid.*, sees in the *Ethics* only a treatise upon the *summum bonum*, this description (in so far as it indicates merely the ascertainment and enumeration of the constituent parts of the *summum bonum*) is too narrow; the *Ethics* itself classifies its contents (x. 10 *init.*) under the four titles of the *summum bonum*, the virtues, friendship, and pleasure—so that it is apparent, even on the surface, that it is not a mere description of the *summum bonum*, but an account of moral action as a whole. If, on the other hand, we include in the discussion of the *summum bonum* the detailed investigation into all its conditions and constituent parts, the suggested description would be too wide, for its most important constituent, theoretic activity, is not fully discussed in the *Ethics*.

[1] We have already discussed (p. 96 sq.) the threefold revision of the *Ethics* of Aristotle, and shall confine ourselves in the following account to the *Nicomachean Ethics*, which alone is genuine, giving the parallel

1. The End of all human activity[1] is the Good, or, more accurately, that Good which is within the reach of human action, for Ethics has no concern with the abstract Idea of the Good.[2] The final aim of all action must be the highest Good: in other words, it must be something which is sought, not for the sake of anything else, but simply and solely for its own sake, and is sufficient of itself to invest life with the highest worth.[3]

passages from the other two only where they elucidate or deviate from it in any important respect.

[1] Cf. on this subject TEICHMÜLLER ('Die Einheit der arist. Eudämonie,' *Bulletin de la Classe d. Sci. hist.-philol. et polit. de l'Académie de St-Pétersbourg*, t. xvi. N. 20 sqq. p. 305 sqq.), who rightly emphasises the distinction between the constituent elements and the external conditions of happiness.

[2] *Eth.* i. 1 *init.* Πᾶσα τέχνη καὶ πᾶσα μέθοδος, ὁμοίως δὲ πρᾶξίς τε καὶ προαίρεσις, ἀγαθοῦ τινος ἐφίεσθαι δοκεῖ· διὸ καλῶς ἀπεφήναντο τἀγαθὸν, οὗ πάντ' ἐφίεται. This good is called here (1094, a, 18), and c. 2, 1095, a, 16, πρακτὸν and πρακτὸν ἀγαθόν. Aristotle next comes to speak more fully, c. 4, of the Platonic Idea of the Good (*Ph. d. Gr.* i. 591 sqq.), and after bringing forward several other arguments against it says, *ibid.* 1096, b, 30: this discussion, however, properly belongs to another science; εἰ γὰρ καὶ ἔστιν ἕν τι καὶ [so RASSOW, *Forsch. üb. die nikom. Eth.* 53 sq., with three MSS., for τὸ] κοινῇ κατηγορούμενον ἀγαθὸν ἢ χωριστόν τι αὐτὸ καθ' αὑτὸ, δῆλον ὡς οὐκ ἂν εἴη πρακτὸν οὐδὲ κτητὸν ἀνθρώπῳ· νῦν δὲ τοιοῦτόν τι ζητεῖται. Nor is it true that the idea of the good, at any rate as an ideal, furnishes the guiding principle in the pursuit of the κτητὰ καὶ πρακτὰ τῶν ἀγαθῶν. *Inter alia*, he says: ἄπορον δὲ καὶ τί ὠφεληθήσεται ὑφάντης ἢ τέκτων πρὸς τὴν αὑτοῦ τέχνην εἰδὼς αὐτὸ τἀγαθὸν, &c., as though moral philosophy were meant for the service of handicraft. This it certainly is not in Aristotle himself (as may herewith be expressly remarked in view of the remarks of TEICHMÜLLER, *loc. cit.* 315 sq.), and yet it must be if he is justified in using against Plato an argument that with equal justice might be turned against himself; for it must be confessed that the advantage to be derived by the weaver or the carpenter in the pursuit of his calling from Aristotle's treatise upon happiness is not great.

[3] *Eth.* i. 1, 1094, a, 18: εἰ δή τι τέλος ἐστὶ τῶν πρακτῶν ὃ δι' αὑτὸ βουλόμεθα, τἆλλα δὲ διὰ τοῦτο, καὶ μὴ πάντα δι' ἕτερον αἱρούμεθα (πρόεισι γὰρ οὕτω γ' εἰς ἄπειρον, ὥστ' εἶναι κενὴν καὶ ματαίαν τὴν ὄρεξιν) δῆλον ὡς τοῦτ' ἂν εἴη τἀγαθὸν [absolute good] καὶ τὸ ἄριστον. c. 5: in every form of activity the good is that οὗ χάριν τὰ λοιπὰ πράττεται—the

This highest Good is admitted on all hands to be Happiness:[1] but when we ask in what Happiness itself

τέλος. ὥστ' εἴ τι τῶν πρακτῶν ἁπάντων ἐστὶ τέλος, τοῦτ' ἂν εἴη τὸ πρακτὸν ἀγαθόν, εἰ δὲ πλείω, ταῦτα . . . τὸ δ' ἄριστον τέλειόν τι φαίνεται . . . τελειότερον δὲ λέγομεν τὸ καθ' αὑτὸ διωκτὸν τοῦ δι' ἕτερον καὶ τὸ μηδέποτε δι' ἄλλο αἱρετὸν τῶν καὶ καθ' αὑτὰ καὶ διὰ τοῦθ' αἱρετῶν, καὶ ἁπλῶς δὴ τέλειον τὸ καθ' αὑτὸ αἱρετὸν ἀεὶ καὶ μηδέποτε δι' ἄλλο. And further on: τὸ γὰρ τέλειον ἀγαθὸν αὔταρκες εἶναι δοκεῖ . . . τὸ δ' αὔταρκες τίθεμεν ὃ μονούμενον αἱρετὸν ποιεῖ τὸν βίον καὶ μηδενὸς ἐνδεᾶ (similarly PLATO, *Phileb.* 22, B); x. 6, 1176, b, 3, 30. Cf. i. 12, where it is explained that happiness, as complete in itself, is not an ἐπαινετόν, but a τίμιον, something κρεῖττον τῶν ἐπαινετῶν.

[1] Aristotle presupposes this, *Eth.* i. 2, 1095, a, 17; *Rhet.* i. 5 *init.*, as something universally acknowledged. He proves it more fully, *Eth.* i. 5, 1097, a, 34 sqq.; cf. x. 6, 1176, b, 3, 30, from the points of view indicated in the preceding note. In *Eth.* i. 5, however, the words, 1097, b, 16 sqq., make a difficulty: ἔτι δὲ, it is here said, πάντων αἱρετωτάτην [sc. τὴν εὐδαιμονίαν οἰόμεθα εἶναι] μὴ συναριθμουμένην, συναριθμουμένην δὲ δῆλον ὡς αἱρετωτέραν μετὰ τοῦ ἐλαχίστου τῶν ἀγαθῶν· ὑπεροχὴ γὰρ ἀγαθῶν γίνεται τὸ προστιθέμενον, ἀγαθῶν δὲ τὸ μεῖζον αἱρετώτερον ἀεί. The most obvious meaning of these words, viz. that happiness is in the highest degree desirable without the addition of anything else, and is increased by every addition although of ever so small a good (BRANDIS, p. 1344; MÜNSCHER, *Quæst. crit. in Eth. N.* Marb. 1861, p. 9 sqq.), gives a wholly inadmissible sense to the passage; how could what is complete still grow? (as TEICHMÜLLER rightly asks, *loc. cit.* p. 312), or how can happiness, which contains all goods in itself, be increased by further additions? Moreover, it is expressly said, *Eth.* x. 2, 1172, b, 32, that nothing can be 'the good' ὃ μετά τινος τῶν καθ' αὑτὸ ἀγαθῶν αἱρετώτερον γίνεται. TEICHMÜLLER accordingly proposes to take the sentence as an apagoge: happiness is the most desirable thing, if we do not regard it as a sum, but if we do, then the addition of the smallest of goods must make it more desirable, and therefore we cannot regard it as a sum of particular goods. The same explanation is given by THILO, *Zeitschr. f. exacte Phil.* ii. 3, 284 sq., and LAAS (see *infra*). The question, however, in the passage is, not whether happiness is a sum of goods, but whether it is the most desirable of things or not; nor does συναριθμούμενος mean 'regarded as a sum;' συναριθμεῖν can only here have the meaning which it has in the kindred passage (explained by *Top.* iii. 2, 117, a, 16, and ALEXANDER *in loco*) *Rhet.* i. 7, 1363, b, 19; *Polit.* vi. 3, 1318, a, 35; *Soph. El.* 5, 167, a, 25; *Eth.* ii. 3, 1105, b, 1; *i.e.* it must mean either to 'count along with' or to 'count up;' when used with a singular subject it can of course only mean the former, and accordingly is explained, l. 14 of

consists, differences at once arise.[1] Some give the preference to pleasure, others to practical activity, a third class to the scientific life.[2] The first of these views seems to Aristotle hardly to deserve refutation.

the same passage, by *μονούμενον* and understood in this sense, *M. Mor.* i. 2, 1184, a, 15 sqq.; cf. RASSOW, *Beitr. z. Erkl. d. nik. Ethik* (Weimar, 1862, *Gymn.-Progr.*), p. 5 sqq., where the explanations of LAAS (*Εὐδαιμονία Arist.* Berl. 1858, 7 sqq.), MÜNSCHER, and others, are also discussed. RASSOW's own explanation (p. 10: 'that happiness is not to be reckoned among goods nor regarded as a good beside other goods') is not easy to harmonise with the language of the passage. If the text is correct, we must explain it rather to mean: 'We regard happiness as the most desirable of all things, so far as it can be compared with them without itself being classed as one of the *πάντα* [it is more desirable than anything else]; if we desire to class it as a good together with other goods, it would become more desirable still if its value were increased by the addition of ever so small another good.' But it is difficult to see the force of the latter remark, for the proof of the proposition that happiness is perfect good, is only weakened by this concession to a non-Aristotelian point of view. It is a question whether the words *ὑπεροχὴ γὰρ . . . αἱρετώτερον ἀεὶ*, or perhaps the whole passage from *συναριθμουμένην δὲ* to *αἱρετώτ. ἀεὶ* may not be an insertion by a later hand. In the former case, we may supply *πάντων* after *αἱρετωτέραν* in the preceding words and explain them to mean: 'We hold that happiness is the most desirable of all things so far as it is not itself classed as one of them; or in so far as it is classed along with other things, combined with the smallest other good, that it is more desirable than all else besides.' The most recent editor and commentator on the *Nicomachean Ethics*, RAMSAUER, pays no regard either to the inherent difficulty of the passage or to the attempts of his predecessors to solve it.

[1] See *Eth.* i. 2, 1095, a, 20 sqq., c. 9 *init.*; *Rhet.* ibid. 1360, b, 14 sqq., where the things which are commonly regarded as happiness are enumerated and discussed in detail for the special necessities of the orator.

[2] Aristotle says previously, *Eth.* i. 2, 1095, a, 28, that he does not intend to investigate every view upon the nature of happiness, but only such as are the most commonly accepted and the most plausible. As such he names these three, c. 3 *init.*: *τὸ γὰρ ἀγαθὸν καὶ τὴν εὐδαιμονίαν οὐκ ἀλόγως ἐοίκασιν ἐκ τῶν βίων ὑπολαμβάνειν οἱ μὲν πολλοὶ καὶ φορτικώτατοι τὴν ἡδονήν, διὸ καὶ βίον ἀγαπῶσι τὸν ἀπολαυστικόν. τρεῖς γάρ εἰσι μάλιστα οἱ προὔχοντες, ὅ τε νῦν εἰρημένος καὶ ὁ πολιτικὸς καὶ τρίτος ὁ θεωρητικός.*

Without denying that pleasure is a good, he has a most thorough contempt for the life which is dedicated to pleasure alone. Pleasure, he remarks, cannot be the highest Good, for these among other reasons: that it is not self-sufficing; that some pleasures are not desirable; that many things have an independent value of their own wholly apart from the pleasure that they bring; that pleasure and enjoyment are only a recreation, and only exist for the sake of action; that even the worst men, whom we cannot call in any sense happy, are capable of sensual enjoyment, whereas that alone is truly good which the virtuous man recognises as such.[1] Just as little can honour or wealth be admitted to be the highest good. The former does not so much affect those to whom it is paid as those who pay it; its value, moreover, consists essentially in the fact that it produces consciousness of worth, which, therefore, is of more value than the honour itself.[2] Wealth, again, is not desired on its own account, so that it wants the first characteristic of Good in the higher sense.[3]

The happiness of man can, in fact, consist only in his activity,[4] or more accurately in that activity which is

[1] *Eth.* i. 3. 1095, b, 19, x. 2, 1172, b, 26, 1173, b, 28 to the end of the chap.; c. 6, 1176, b, 12–1177, a, 9.

[2] *Eth.* i. 3, 1095, b, 22 sqq.

[3] *Ibid.* 1096, a, 5, cf. *Rhet.* i. 5, 1361, a, 23.

[4] Aristotle frequently repeats that happiness does not consist in the mere possession of certain advantages, in a mere ἕξις (on which see i. 285, n. 3, *sup.*) or κτῆσις, but in actual activity. See e.g. *Eth.* i. 3, 1095, b, 31, c. 6, 1098, a, 3; and the more definite statement, c. 9, 1098, b, 31: διαφέρει δὲ ἴσως οὐ μικρὸν ἐν κτήσει ἢ χρήσει τὸ ἄριστον ὑπολαμβάνειν καὶ ἐν ἕξει ἢ ἐνεργείᾳ. τὴν μὲν γὰρ ἕξιν ἐνδέχεται μηδὲν ἀγαθὸν ἀποτελεῖν ὑπάρχουσαν, οἷον τῷ καθεύδοντι ἢ καὶ ἄλλως πως ἐξηργηκότι, τὴν δ' ἐνέργειαν οὐχ οἷόν τε· πράξει γὰρ ἐξ ἀνάγκης καὶ εὖ πράξει. As at the Olympic games it is not sufficient to be strong and fair, in

proper to him as man.[1] What kind of activity is this? Not the general vital activity, which he shares even with plants; not the sensitive activity, which belongs to the lower animals as well as to man; but the activity of reason.[2] Now the activity of reason, in so far as it is rightly performed, we call Virtue. The proper happiness of man consists, therefore, in virtuous activity, or, inasmuch as there are several such, in the noblest and most perfect of these.[3] But this is the theoretic or pure activity of thought. For it belongs to the noblest faculty and directs itself to the highest object;

order to win the crown of victory, but one must engage in the contest for it—so in life we win the good and the fair by action alone. In reference to these passages, see x. 6, 1176, a, 33: *εἴπομεν δ' ὅτι οὐκ ἔστιν ἕξις* [*ἡ εὐδαιμονία*]· *καὶ γὰρ τῷ καθεύδοντι διὰ βίου ὑπάρχοι ἄν . . . καὶ τῷ δυστυχοῦντι τὰ μέγιστα . . . ἀλλὰ μᾶλλον εἰς ἐνέργειάν τινα θετέον.* ix. 9, 1169, b, 29: *ἡ εὐδαιμονία ἐνέργειά τίς ἐστιν, ἡ δ' ἐνέργεια δῆλον ὅτι γίνεται καὶ οὐχ ὑπάρχει ὥσπερ κτῆμά τι.*

[1] *Eth.* i. 6, 1097, b, 24: we shall discover wherein happiness consists, *εἰ ληφθείη τὸ ἔργον τοῦ ἀνθρώπου. ὥσπερ γὰρ αὐλητῇ . . . καὶ παντὶ τεχνίτῃ, καὶ ὅλως ὧν ἐστὶν ἔργον τι καὶ πρᾶξις, ἐν τῷ ἔργῳ δοκεῖ τἀγαθὸν εἶναι καὶ τὸ εὖ, οὕτω δόξειεν ἂν καὶ ἀνθρώπῳ, εἴπερ ἔστι τι ἔργον αὐτοῦ.*

[2] *Ibid.* l. 33 sqq.

[3] *Eth.* i. 6, 1098, a, 7: *εἰ δ' ἐστὶν ἔργον ἀνθρώπου ψυχῆς ἐνέργεια κατὰ λόγον ἢ μὴ ἄνευ λόγου, τὸ δ' αὐτό φαμεν ἔργον εἶναι τῷ γένει τοῦδε καὶ τοῦδε σπουδαίου . . . προστιθεμένης τῆς κατ' ἀρετὴν ὑπεροχῆς πρὸς τὸ ἔργον· κιθαριστοῦ μὲν γὰρ τὸ κιθαρίζειν, σπουδαίου δὲ τὸ εὖ· εἰ δ' οὕτως, ἀνθρώπου δὲ τίθεμεν ἔργον ζωήν τινα, ταύτην δὲ ψυχῆς ἐνέργειαν καὶ πράξεις μετὰ λόγου, σπουδαίου δ' ἀνδρὸς εὖ ταῦτα καὶ καλῶς, ἕκαστον δ' εὖ κατὰ τὴν οἰκείαν ἀρετὴν ἀποτελεῖται· εἰ δ' οὕτω τὸ ἀνθρώπινον ἀγαθὸν ψυχῆς ἐνέργεια γίνεται κατ' ἀρετήν, εἰ δὲ πλείους αἱ ἀρεταὶ κατὰ τὴν ἀρίστην καὶ τελειοτάτην.* x. 6, 1176, b, 2: activities are valued either for the sake of something else or for their own sake; the latter is the case when nothing is expected from them beyond the activity itself. Happiness (*v. supra*) must be an activity of the latter kind. *τοιαῦτα δ' εἶναι δοκοῦσιν αἱ κατ' ἀρετὴν πράξεις. τὰ γὰρ καλὰ καὶ σπουδαῖα πράττειν τῶν δι' αὑτὰ αἱρετῶν* [sc. *ἐστίν*]. *καὶ τῶν παιδιῶν δὲ αἱ ἡδεῖαι.* Happiness, however, cannot consist in these (see p. 141, n. 1, *sup.*), but (1177, a, 9) *ἐν ταῖς κατ' ἀρετὴν ἐνεργείαις*; it is (i. 10, 1099, b, 26) *ψυχῆς ἐνέργεια κατ' ἀρετὴν ποιά τις*, or more accurately (i. 13, *init.*), *ψυχῆς ἐνέργειά τις κατ' ἀρετὴν τελείαν.*

it is exposed to the least interruption, and affords the highest pleasure; it is least dependent on foreign support and external expedients; it is its own aim and object, and is valued purely for its own sake; in it man arrives at rest and peace, while in the military and political, or in the practical life generally, he is ever restlessly pursuing ends which lie outside the activity itself. Reason is the Divine in us. It is the true essence of the man. The pure activity of reason can alone perfectly accord with his true nature. It alone can afford him unconditional satisfaction, and raise him above the limitations of humanity into the life of God.[1] Next to it comes moral activity, which

[1] *Eth*. x. 7, *init.*: εἰ δ' ἐστὶν ἡ εὐδαιμονία κατ' ἀρετὴν ἐνέργεια, εὔλογον κατὰ τὴν κρατίστην· αὕτη δ' ἂν εἴη τοῦ ἀρίστου. εἴτε δὴ νοῦς τοῦτο εἴτε ἄλλο τι, . . . εἴτε θεῖον ὂν καὶ αὐτὸ εἴτε τῶν ἐν ἡμῖν τὸ θειότατον, ἡ τούτου ἐνέργεια κατὰ τὴν οἰκείαν ἀρετὴν εἴη ἂν ἡ τελεία εὐδαιμονία. ὅτι δ' ἐστὶ θεωρητικὴ εἴρηται. After proving this as above, Aristotle continues, 1177, b, 16: εἰ δὴ τῶν μὲν κατὰ τὰς ἀρετὰς πράξεων αἱ πολιτικαὶ καὶ πολεμικαὶ κάλλει καὶ μεγέθει προέχουσιν, αὗται δ' ἄσχολοι καὶ τέλους τινὸς ἐφίενται καὶ οὐ δι' αὑτὰς αἱρεταί εἰσιν, ἡ δὲ τοῦ νοῦ ἐνέργεια σπουδῇ τε διαφέρειν δοκεῖ θεωρητικὴ οὖσα, καὶ παρ' αὑτὴν οὐδενὸς ἐφίεσθαι τέλους, ἔχειν τε ἡδονὴν οἰκείαν, αὕτη δὲ συναύξει τὴν ἐνέργειαν, καὶ τὸ αὔταρκες δὴ καὶ σχολαστικὸν καὶ ἄτρυτον ὡς ἀνθρώπῳ, καὶ ὅσα ἄλλα τῷ μακαρίῳ ἀπονέμεται, κατὰ ταύτην τὴν ἐνέργειαν φαίνεται ὄντα, ἡ τελεία δὴ εὐδαιμονία αὕτη ἂν εἴη ἀνθρώπου . . . ὁ δὲ τοιοῦτος ἂν εἴη βίος κρείττων ἢ κατ' ἄνθρωπον· οὐ γὰρ ᾗ ἄνθρωπός ἐστιν οὕτω βιώσεται, ἀλλ' ᾗ θεῖόν τι ἐν αὐτῷ ὑπάρχει· ὅσῳ δὲ διαφέρει τοῦτο τοῦ συνθέτου, τοσούτῳ καὶ ἡ ἐνέργεια τῆς κατὰ τὴν ἄλλην ἀρετήν. εἰ δὴ θεῖον &c. (see p. 164. X. 8, 1178, b, 1: we require many aids to action, τῷ δὲ θεωροῦντι οὐδενὸς τῶν τοιούτων πρός γε τὴν ἐνέργειαν χρεία, ἀλλ' ὡς εἰπεῖν καὶ ἐμπόδιά ἐστι πρός γε τὴν θεωρίαν· ᾗ δ' ἄνθρωπός ἐστι καὶ πλείοσι συζῇ, αἱρεῖται τὰ κατ' ἀρετὴν πράττειν· δεήσεται δ' οὖν τῶν τοιούτων πρὸς τὸ ἀνθρωπεύεσθαι. ἡ δὲ τελεία εὐδαιμονία ὅτι θεωρητική τίς ἐστιν ἐνέργεια καὶ ἐντεῦθεν ἂν φανείη. The gods are pre-eminently considered happy; but what actions can we assign to them? Shall we suppose that they exhibit their justice by buying and selling, their valour by encountering danger, their liberality by gifts of money, their self-command by the conquest of evil desires? Nor will they sleep like Endymion. τῷ δὴ

thus constitutes the second essential element of happiness. Inasmuch, however, as it is the Divine in man which is called into exercise in thought, the latter may be regarded as a superhuman good; whereas moral virtue is in an especial sense *the good of man*.[1]

While these are undoubtedly the essential and indispensable elements of Happiness, Aristotle does not exclude from that notion other gifts and advantages, some of which proceed from moral and rational activity, while others are independent of it.[2] Thus, for instance,

ζῶντι, &c. (see i. 397, n. 1, *supra*) . . . τοῖς μὲν γὰρ θεοῖς ἅπας ὁ βίος μακάριος, τοῖς δ' ἀνθρώποις, ἐφ' ὅσον ὁμοίωμά τι τῆς τοιαύτης ἐνεργείας ὑπάρχει· τῶν δ' ἄλλων ζῴων οὐδὲν εὐδαιμονεῖ, ἐπειδὴ οὐδαμῇ κοινωνεῖ θεωρίας. ἐφ' ὅσον δὴ διατείνει ἡ θεωρία, καὶ ἡ εὐδαιμονία, καὶ οἷς μᾶλλον ὑπάρχει τὸ θεωρεῖν, καὶ εὐδαιμονεῖν [sc. μᾶλλον ὑπάρχει], οὐ κατὰ συμβεβηκὸς, ἀλλὰ κατὰ τὴν θεωρίαν· αὐτὴ γὰρ καθ' αὑτὴν τιμία. ὥστ' εἴη ἂν ἡ εὐδαιμονία θεωρία τις. *Metaph.* xii. 7, 1072, b, 24: ἡ θεωρία τὸ ἥδιστον καὶ ἄριστον. Cf. i. 398, n. 5, *supra*. The contradiction between these statements and *Pol.* vii. 2, 1324, a, 25, c. 3, 1325, b, 14 sqq. is only apparent. In the latter passages theoretic activity is not compared as such with practical, but the life of solitary devotion to science with the social life of the state; and while the practical life is declared to be the more excellent, the expression is used in its wider sense, and the theoretic activity which is self-sufficing and directed towards no external end is expressly said to be the most perfect form of πρᾶξις. Cf. also *Pol.* vii. 15, 1334, b, 14.

[1] *Eth.* x. 7 (see preceding n.); c. 8 *init.*: δευτέρως δ' [εὐδαίμων] ὁ κατὰ τὴν ἄλλην ἀρετὴν [βίος]· αἱ γὰρ κατ' αὐτὴν ἐνέργειαι ἀνθρωπικαί . . . συνέζευκται δὲ καὶ ἡ φρόνησις τῇ τοῦ ἤθους ἀρετῇ . . . συνηρτημέναι δ' αὗται [the ethical virtues] καὶ τοῖς πάθεσι περὶ τὸ σύνθετον ἂν εἶεν· αἱ δὲ τοῦ συνθέτου ἀρεταὶ ἀνθρωπικαί. καὶ ὁ βίος δὴ ὁ κατ' αὐτὰς καὶ ἡ εὐδαιμονία. *Ibid.* 1178, b, 5 (see preceding n.). As will be obvious from the preceding account, the distinction here is merely in the mode of expression, nor can we say with RITTER (iii. 327) that, because Aristotle wavers in the mode of presenting his view, the theoretic understanding is intended to be left out of account in defining human happiness.

[2] The statement that such things deserve to be called advantages only in so far as they have a directly moral significance (TEICHMÜLLER, *loc. cit.* 337 sq.) is not Aristotle's; he calls them often enough goods, and that which is a good is presumably an advantage.

happiness necessarily presupposes a certain completeness of life. A child cannot be happy any more than it can be virtuous, for it is still incapable of any rational, moral action.[1] Mere temporary happiness, moreover, is insufficient: one swallow does not make summer.[2] Therefore, if we cannot say with Solon that no man is happy till he is dead, yet we must admit that happiness can, at any rate, only be looked for in a life which has reached a certain degree of maturity. Happiness, in fact, is the virtuous activity of the soul in a completed life.[3] Again, man requires for perfect happiness certain external goods. Happiness, it is true, is something other than good fortune.[4] Poverty, sickness, and misfortune may even serve the brave man as an occasion for noble conduct, and so far the really happy man can never be miserable. And yet, on the other hand, no one will call a man any longer happy if the fate of a Priam overtakes him;[5] and while the virtuous man can be content with few gifts of fortune,[6] yet in many respects they are indispensable to him: without wealth, power, influence, little can be accomplished; noble

[1] *Eth.* i. 10, 1100, a, 1.

[2] *Ibid.* i. 6 *fin.*

[3] *Ibid.* i. 11, 1191, a, 14: τί οὖν κωλύει λέγειν εὐδαίμονα τὸν κατ' ἀρετὴν τελείαν ἐνεργοῦντα καὶ τοῖς ἐκτὸς ἀγαθοῖς ἱκανῶς κεχορηγημένον, μὴ τὸν τυχόντα χρόνον ἀλλὰ τέλειον βίον; ἢ προσθετέον καὶ βιωσόμενον οὕτω καὶ τελευτήσοντα κατὰ λόγον; cf. p. 133, n. 2, x. 7, 1177, b, 24: ἡ τελεία δὴ εὐδαιμονία αὕτη ἂν εἴη ἀνθρώπου, λαβοῦσα μῆκος βίου τέλειον· οὐδὲν γὰρ ἀτελές ἐστι τῶν τῆς εὐδαιμονίας.

[4] *Polit.* vii. 1, 1323, b, 26; *Eth.* vii. 14, 1153, b, 21.

[5] *Eth.* i. 11, 1101, a, 6 (see p. 150, n. 2, *infra*); cf. vii. 14, 1153, b, 17; *Polit.* vii. 13, 1332, a, 19.

[6] *Eth.* x. 9, 1179, a, 1: οὐ μὴν οἰητέον γε πολλῶν καὶ μεγάλων δεήσεσθαι τὸν εὐδαιμονήσοντα, εἰ μὴ ἐνδέχεται ἄνευ τῶν ἐκτὸς μακάριον εἶναι· οὐ γὰρ ἐν τῇ ὑπερβολῇ τὸ αὔταρκες καὶ ἡ πρᾶξις, δυνατὸν δὲ καὶ μὴ ἄρχοντα γῆς καὶ θαλάττης πράττειν τὰ καλά. Private persons, it is remarked, are as a rule the happiest. Cf. *Polit.* vii. 1, 1323, a, 38 sqq.

birth, beauty, joy in one's children, are elements in perfect happiness; friendship is even more necessary to the happy than to the unhappy; health is invaluable to all; in a word, for complete satisfaction in life, besides spiritual good, a certain supply of material and external advantages (χορηγία, εὐετηρία, εὐημερία) is indispensable,[1] and this it is a mistake to suppose is necessarily bestowed by the gods upon the virtuous man.[2] The gifts of fortune taken in themselves, therefore, are certainly a good, although to the individual they may often turn out an evil.[3]

Even pleasure Aristotle reckoned an element in happiness, defending it against the reproaches cast upon it by Plato and Speusippus.[4] For he takes a quite

[1] See *Eth.* i. 9, 1099, a. 31 sqq. c. 3, 1096, a, 1, c. 11, 1101, a, 14, 22, vii. 14, 1153, b, 17, viii. 1 *init.* ix. 9, 11 (to which I shall subsequently return), x. 8, 1178, a, 23 sq. c. 9 *init.*; *Polit.* vii. 1, 1323, a, 24, c. 13, 1331, b, 41, also *Rhet.* i. 5, 1360, b, 18 sqq.

[2] Aristotle says, indeed, *Eth.* x. 9 *ad fin.*, c. 10 *init.*, that he who lives according to reason is dear to the gods, who take pleasure in that which is akin to themselves; if the gods care for men, such a one will be the most highly favoured by them, and if anything is their gift it must be happiness. We have already seen that his system leaves no room for a special providence. The care of the gods, therefore, if we transfer the expression from popular to scientific language, must coincide with the natural operation of the rational life. External goods, on the other hand, he consistently treats elsewhere as matter of chance; see *Eth.* x. 10, 1099, b, 20 sqq. vii. 14, 1173, b, 17; *Polit.* vii. 1, 1323, b, 27, c. 13, 1332, a, 29.

[3] *Eth.* v. 2, 1129, b, 1 sqq.; cf. c. 13 *fin.*

[4] ZELL. *Ph. d. Gr.* i. pp. 506, 861, 3. Whether Aristotle includes the Cynics is not clear; we might conclude so from *Eth.* x. 1; cf. *ibid.* i. 262, 2. For Aristotle's doctrine of pleasure see the full discussion, *Eth.* x. 1–5, vii. 12–15. It is sufficient to quote x. 2, 1173, a, 15: λέγουσι δὲ τὸ μὲν ἀγαθὸν ὡρίσθαι, τὴν δ' ἡδονὴν ἀόριστον εἶναι, ὅτι δέχεται τὸ μᾶλλον καὶ τὸ ἧττον (PLATO, *Phileb.* 27, E sqq. 30, E sq. and other passages, see ZELL. *Ph. d. Gr.* i. 506); but the same is true of the virtues or of health. It is further asserted that pleasure is a motion and a becoming (cf. *Ph. d. Gr.* i. 506, 3): but if it were a

different view of its nature. Plato had relegated pleasure to the sphere of indeterminate, motionless Being or Becoming; to Aristotle, on the other hand, it is rather the natural perfection of every activity, and as such the immediate outcome of the perfected activity in as true a sense as health and beauty are the immediate outcome of bodily perfection. It is not a movement and a becoming, but the goal in which every movement of life finds rest and completeness.[1] The

motion it must continue for a certain lapse of time, and therefore, like all motion, have a definite velocity; if a becoming, it must have a definite product; but neither of these is the case: pleasure is produced by a motion, but it is not itself a motion (*ibid.* l. 29 sqq. c. 3, 1174, a, 19 sqq.). Furthermore, every pleasure involves a pain: it is a satisfaction, and every satisfaction presupposes a want but there are enjoyments which involve no pain, and do not consist in satisfaction of a want; these last, however, are merely causes of pleasure, not the pleasure itself (*ibid.* 1173, b, 7 sqq. vii. 15, 1154, b, 15). Lastly, there are evil pleasures; but it does not follow for this reason that all pleasure is evil (x. 2, 1173, b, 20 sqq. c. 5, 1175, b, 24 sqq. vii. 13 f. 1153, a, 17–35, b, 7–13).

[1] *Eth.* x. 3 *init.*: pleasure is like intuitive perception, complete at every moment of time: ὅλον γάρ τί ἐστι καὶ κατ᾽ οὐδένα χρόνον λάβοι τις ἂν ἡδονὴν ἧς ἐπὶ πλείω χρόνον γινομένης τελειωθήσεται τὸ εἶδος. c. 4, 1174, a, 20: κατὰ πᾶσαν γὰρ αἴσθησίν ἐστιν ἡδονή, ὁμοίως δὲ διάνοιαν καὶ θεωρίαν . . . τελειοῖ δὲ τὴν ἐνέργειαν ἡ ἡδονή. 1174, b, 31: τελειοῖ δὲ τὴν ἐνέργειαν ἡ ἡδονὴ οὐχ ὡς ἡ ἕξις ἐνυπάρχουσα [as this particular form of activity itself, as, for instance, virtue], ἀλλ᾽ ὡς ἐπιγιγνόμενόν τι τέλος οἷον τοῖς ἀκμαίοις ἡ ὥρα. It lasts, therefore, as long as the activity in question continues as it was, but changes and fades with the activity itself, which in man can never but be an intermittent one (cf. vii. 15, 1154, b, 20 sqq.), c. 5, 1075, a, 20: ἄνευ τε γὰρ ἐνεργείας οὐ γίνεται ἡδονή, πᾶσάν τε ἐνέργειαν τελειοῖ ἡ ἡδονή· ὅθεν δοκοῦσι καὶ τῷ εἴδει διαφέρειν· τὰ γὰρ ἕτερα τῷ εἴδει ὑφ᾽ ἑτέρων οἰόμεθα τελειοῦσθαι. This is further developed in the passage that follows, prominence being given to the fact that every activity obtains from the pleasure springing from it a heightened energy and power of endurance, whereas it is disturbed by that which proceeds from another; vii. 14, 1153, b, 14; see *infra.* The statement, *Rhet.* i. 11 *init.* is less accurate: ὑποκείσθω δ᾽ ἡμῖν εἶναι τὴν ἡδονὴν κίνησίν τινα τῆς ψυχῆς καὶ κατάστασιν ἀθρόαν καὶ αἰσθητὴν εἰς τὴν ὑπάρχουσαν φύσιν, λύπην δὲ τοὐναντίον. For on the one hand, strictly speak-

nobler an activity the higher the pleasure that accompanies it. Thought and moral action afford the purest pleasure,[1] and the blessedness of God is nothing but the pleasure which springs from the most perfect activity.[2] The universal pursuit of pleasure, therefore, according to Aristotle is an absolute necessity, and is, indeed, nothing else than the instinct of life.[3] Pleasure cannot, it is true, be the highest good itself;[4] and a distinction is made between the different kinds of pleasure, each of which has a value assigned to it in direct proportion to the value of the activity which produces it; only the pleasure of the virtuous man is declared to be true and truly human.[5] Nevertheless, Aristotle is far from excluding pleasure in general from the conception of happiness, or assigning to it the subordinate place which Plato had marked out for it.

We have now to consider in what relation these different conditions of happiness stand to one another. That the most indispensable element of it—the one in which the essence of happiness must primarily be sought—can only be the scientific and moral activity of the soul, is often enough asserted by Aristotle. In treating, for instance, of the relation between activity

ing, Aristotle does not regard the soul as moved at all, and, on the other, pleasure, according to the passage just quoted, is not a motion, but the consequence of a motion. This definition is again referred to, *M. Mor.* ii. 7, 1205, b, 6.

[1] *Metaph.* xii. 7, 1072, b, 16, 24; *Eth.* x. 2, 1174, a, 4, c. 4, 1174, b, 20, c. 7, 1177, a, 22, b, 20, i. 9, 1099, a, 7–29, vii. 13, 1153, a, 20.

[2] *Metaph.* ibid.; *Eth.* vii. 15, 1154, b, 25; see p. 398, n. 5, *sup.*

[3] vii. 14, 1153, b, 25–32, x. 2, 1172, b, 35 sqq. c. 4 sq. 1175, a, 10–21, ix. 9, 1170, a, 19.

[4] See p. 140, *supra.*

[5] x. 2, 1173, b, 20 sqq. c. 4 *init.* c. 5, 1175, a, 21 sqq. b, 24, 36 sqq. 1176, a, 17, c. 7, 1177, a, 23, i. 9, 1099, a, 11, vii. 14, 1153, b, 29 sqq. and n. 1, *supra.*

and pleasure, he asserts the unconditioned superiority of the former as definitely as could be desired. A life devoted to enjoyment seems to him unworthy of man. The only activity which he admits to be properly human is the practical: the only one that is more than human is the theoretic.[1] Pleasure is not the end and motive of our actions, but only a necessary concomitant of activity according to nature. If the two could be separated, a good man would unconditionally prefer activity without pleasure to pleasure without activity;[2] but as a matter of fact it is of the very essence of virtue that we cannot separate pleasure from it, and that we find immediate satisfaction in virtuous activity without any addition of pleasure from without.[3] From this point of view the purity of Aristotle's ethics and the distinctness of his utterances are beyond suspicion. His account of external goods might with more reason be accused of making man too dependent upon merely natural and accidental advantages. Yet even these he

[1] See p. 140 sqq. *supra*.

[2] *Eth.* x. 2 *fin.*: οὐδείς τ' ἂν ἕλοιτο ζῆν παιδίου διάνοιαν ἔχων διὰ βίου, ἡδόμενος ἐφ' οἷς τὰ παιδία ὡς οἷόν τε μάλιστα, οὐδὲ χαίρειν ποιῶν τι τῶν αἰσχίστων, μηδέποτε μέλλων λυπηθῆναι. περὶ πολλά τε σπουδὴν ποιησαίμεθ' ἂν καὶ εἰ μηδεμίαν ἐπιφέροι ἡδονήν, οἷον ὁρᾷν, μνημονεύειν, εἰδέναι, τὰς ἀρετὰς ἔχειν. εἰ δ' ἐξ ἀνάγκης ἕπονται τούτοις ἡδοναί, οὐδὲν διαφέρει· ἑλοίμεθα γὰρ ἂν ταῦτα καὶ εἰ μὴ γίνοιτ' ἀπ' αὐτῶν ἡδονή. c. 6, see p. 142, n. 3, *supra*.

[3] *Ibid.* i. 9, 1099, a, 7: ἔστι δὲ καὶ ὁ βίος αὐτῶν καθ' αὑτὸν ἡδύς . . . τοῖς δὲ φιλοκάλοις ἐστὶν ἡδέα τὰ φύσει ἡδέα. τοιαῦτα δ' αἱ κατ' ἀρετὴν πράξεις, ὥστε καὶ τούτοις εἰσὶν ἡδεῖαι καὶ καθ' αὑτάς. οὐδὲν δὴ προσδεῖται τῆς ἡδονῆς ὁ βίος αὐτῶν ὥσπερ περιάπτου τινὸς, ἀλλ' ἔχει τὴν ἡδονὴν ἐν ἑαυτῷ. πρὸς τοῖς εἰρημένοις γὰρ οὐδ' ἐστὶν ἀγαθὸς ὁ μὴ χαίρων ταῖς καλαῖς πράξεσιν . . . εἰ δ' οὕτω, καθ' αὑτὰς ἂν εἶεν αἱ κατ' ἀρετὴν πράξεις ἡδεῖαι . . . ἄριστον ἄρα καὶ κάλλιστον καὶ ἥδιστον ἡ εὐδαιμονία, καὶ οὐ διώρισται ταῦτα . . . ἅπαντα γὰρ ὑπάρχει ταῦτα ταῖς ἀρίσταις ἐνεργείαις. *Polit.* vii. 13, 1332, a, 22: τοιοῦτός ἐστιν ὁ σπουδαῖος ᾧ διὰ τὴν ἀρετὴν τὰ ἀγαθά ἐστι τὰ ἁπλῶς ἀγαθά.

only recognises in so much and in so far as they are the indispensable conditions of a perfect life and the instruments of moral activity;[1] and in this he is undoubtedly right. On the other hand, he is far from wishing to represent man as the sport of fortune. He is convinced that man's happiness and misery depend upon his spiritual and moral condition; that here alone we can look for the foundation of lasting satisfaction; that the happiness of the virtuous man cannot easily be shaken by external fortune or changed into misery by the hardest lot.[2] Aristotle declares as unhesitatingly as Plato[3] that the true goods are those of the soul: external and physical goods, on the other hand, are

[1] *Eth.* vii. 14, 1153, b, 16: *οὐδεμία γὰρ ἐνέργεια τέλειος ἐμποδιζομένη, ἡ δ' εὐδαιμονία τῶν τελείων· διὸ προσδεῖται ὁ εὐδαίμων τῶν ἐν σώματι ἀγαθῶν καὶ τῶν ἐκτὸς καὶ τῆς τύχης, ὅπως μὴ ἐμποδίζηται ταῦτα. οἱ δὲ τὸν τροχιζόμενον καὶ τὸν δυστυχίαις μεγάλαις περιπίπτοντα εὐδαίμονα φάσκοντες εἶναι, ἐὰν ᾖ ἀγαθὸς* [the Cynics: cf. *Ph. d. Gr.* i. 258, 3, 267, 4; but perhaps also PLATO: see *ibid.* 743 sq.], *ἢ ἑκόντες ἢ ἄκοντες οὐδὲν λέγουσιν.* 1154, b, 11: How far have certain bodily enjoyments any value? *ἢ οὕτως ἀγαθαὶ αἱ ἀναγκαῖαι, ὅτι καὶ τὸ μὴ κακὸν ἀγαθόν ἐστιν; ἢ μέχρι του ἀγαθαί; ibid.* i. 9 sq. 1099, a, 32. *ἀδύνατον γὰρ ἢ οὐ ῥᾴδιον τὰ καλὰ πράττειν ἀχορήγητον ὄντα. πολλὰ γὰρ πράττεται, καθάπερ δι' ὀργάνων διὰ φίλων καὶ πλούτου* &c. b, 27: *τῶν δὲ λοιπῶν ἀγαθῶν* [besides virtue] *τὰ μὲν ὑπάρχειν ἀναγκαῖον, τὰ δὲ συνεργὰ καὶ χρήσιμα πέφυκεν ὀργανικῶς. Polit.* vii. 1, 1323, b, 40: *βίος μὲν ἄριστος, καὶ χωρὶς ἑκάστῳ καὶ κοινῇ ταῖς πόλεσιν, ὁ μετὰ ἀρετῆς κεχορηγημένης ἐπὶ τοσοῦτον ὥστε μετέχειν τῶν κατ' ἀρετὴν πράξεων.* Cf. p. 144 sq.; *Eth. Eud.* i. 2 *fin.*

[2] *Eth.* i. 11, 1100, b, 7: *τὸ μὲν ταῖς τύχαις ἐπακολουθεῖν οὐδαμῶς ὀρθόν· οὐ γὰρ ἐν ταύταις τὸ εὖ ἢ κακῶς, ἀλλὰ προσδεῖται τούτων ὁ ἀνθρώπινος βίος, καθάπερ εἴπαμεν, κύριαι δ' εἰσὶν αἱ κατ' ἀρετὴν ἐνέργειαι τῆς εὐδαιμονίας, αἱ δ' ἐναντίαι τοῦ ἐναντίου . . . περὶ οὐδὲν γὰρ οὕτως ὑπάρχει τῶν ἀνθρωπίνων ἔργων βεβαιότης ὡς περὶ τὰς ἐνεργείας τὰς κατ' ἀρετήν· μονιμώτεραι γὰρ καὶ τῶν ἐπιστημῶν αὗται δοκοῦσιν εἶναι.* 1101, a, 5: *ἄθλιος μὲν οὐδέποτε γένοιτ' ἂν ὁ εὐδαίμων, οὐ μὴν μακάριός γε, ἂν Πριαμικαῖς τύχαις περιπέσῃ. οὐδὲ ποικίλος γε καὶ εὐμετάβολος*: his happiness will be disturbed only by many grievous misfortunes, from which he will again recover only with difficulty.

[3] *Laws*, v. 743, E; *Gorg.* 508, D sqq.; cf. *Ph. d. Gr.* i. p. 505 sq.

valuable only as means to the former.[1] He even expressly says that since true self-love consists in the effort after higher goods, it does not hesitate for the sake of friends and country to sacrifice all outward advantage and even life itself. Yet in all such cases the highest reward—that of the morally beautiful action—is reaped by the doer of it, since a great and beautiful action is of more value and affords a higher happiness than a long life which has accomplished nothing great.[2] Similarly, he holds that it is better to suffer than to do wrong, for in the former case it is only our body

[1] *Eth.* i. 8, 1098, b, 12: νενεμημένων δὴ τῶν ἀγαθῶν τριχῇ, καὶ τῶν μὲν ἐκτὸς λεγομένων, τῶν δὲ περὶ ψυχὴν καὶ σῶμα, τὰ περὶ ψυχὴν κυριώτατα λέγομεν καὶ μάλιστα ἀγαθά. *Polit.* vii. 1, 1323, a, 24: the happy man must possess all three classes of goods; the only question is, in what degree and proportion. In respect of virtue, most people are very easily contented (τῆς ἀρετῆς ἔχειν ἱκανὸν εἶναι νομίζουσιν ὁποσονοῦν); with riches, power, and honour, on the other hand, there is no satisfying them. We must point out to them, ὅτι κτῶνται καὶ φυλάττουσιν οὐ τὰς ἀρετὰς τοῖς ἐκτὸς, ἀλλ' ἐκεῖνα ταύταις, καὶ τὸ ζῆν εὐδαιμόνως . . . ὅτι μᾶλλον ὑπάρχει τοῖς τὸ ἦθος μὲν καὶ τὴν διάνοιαν κεκοσμημένοις εἰς ὑπερβολὴν, ἢ τοῖς ἐκεῖνα μὲν κεκτημένοις πλείω τῶν χρησίμων, ἐν δὲ τούτοις ἐλλείπουσιν. Material possessions, like every instrument, have a natural limit imposed by the purpose for which they are used; increased beyond this limit they are useless or mischievous; spiritual goods, on the other hand, are valuable in proportion to their greatness. If the soul is of more value than the body and external things, the goods of the soul must be of more value than bodily and external goods. ἔτι δὲ τῆς ψυχῆς ἕνεκεν ταῦτα πέφυκεν αἱρετὰ καὶ δεῖ πάντας αἱρεῖσθαι τοὺς εὖ φρονοῦντας, ἀλλ' οὐκ ἐκείνων ἕνεκεν τὴν ψυχήν. The blessedness of the gods shows that happiness depends for its amount upon the degree of virtue and insight, ὃς εὐδαίμων μὲν ἐστι καὶ μακάριος, δι' οὐθὲν δὲ τῶν ἐξωτερικῶν ἀγαθῶν ἀλλὰ δι' αὑτὸν αὐτὸς καὶ τῷ ποιός τις εἶναι τὴν φύσιν, and accordingly we distinguish εὐδαιμονία from εὐτυχία.

[2] *Eth.* ix. 8, 1169, a, 6 sqq., where, among other things (see especially the passage cited, p. 132), it is said, 9: τὰ κάλλιστα πράττειν κοινῇ τ' ἂν πάντ' εἴη τὰ δέοντα [?] καὶ ἰδίᾳ ἑκάστῳ τὰ μέγιστα τῶν ἀγαθῶν, εἴπερ ἡ ἀρετὴ τοιοῦτόν ἐστιν. 31: εἰκότως δὴ δοκεῖ σπουδαῖος εἶναι, ἀντὶ πάντων αἱρούμενος τὸ καλόν.

or property that suffers, in the latter it is our character.[1] Aristotle thus keeps fast hold throughout of the principle with which he started in the investigation of the highest good—namely, that happiness consists primarily and essentially in acting according to reason, or in the exercise of a perfected virtue. Other goods can claim to be considered as good only *sub modo*: in so far as they are a natural product of this activity, like pleasure, or a means to its attainment, like outward and physical goods. Should, however, a case occur in which a choice must be made between the different goods, all others must give way before the moral and spiritual, since they alone are absolutely and unconditionally good.[2]

If, then, virtue is the essential condition of happiness, the problem of Ethics is to investigate the nature of virtue and to exhibit its constituent parts;[3] the question being of course confined to spiritual perfection.[4] Now this, like spiritual activity itself, is of a

[1] *Eth.* v. 15, 1138, a, 28: it is an evil both to suffer injustice wrong and to do it, the former being an ἔλαττον, the latter a πλέον ἔχειν τοῦ μέσου, but to do injustice is worse, as it alone is μετὰ κακίας.

[2] We have already seen this (p. 149), and shall find further in his theory of virtue that Aristotle admits only those as genuine virtues which seek their end in the moral activity itself; *Eth.* iv 2 *init.*: αἱ δὲ κατ' ἀρετὴν πράξεις καλαὶ καὶ τοῦ καλοῦ ἕνεκα . . . ὁ δὲ διδοὺς . . . μὴ τοῦ καλοῦ ἕνεκα ἀλλὰ διά τιν' ἄλλην αἴτιαν, οὐκ ἐλευθέριος ἀλλ' ἄλλος τις ῥηθήσεται.

[3] *Eth.* i. 13: ἐπεὶ δ' ἐστὶν ἡ εὐδαιμονία ψυχῆς ἐνέργειά τις κατ' ἀρετὴν τελείαν, περὶ ἀρετῆς ἐπισκεπτέον· τάχα γὰρ οὕτως ἂν βέλτιον καὶ περὶ τῆς εὐδαιμονίας θεωρήσαιμεν.

[4] By the word ἀρετὴ the Greek meant, as is well known, not only moral excellence but every accomplishment or perfection that belonged to person or thing. In this sense it is used by Aristotle, *e.g.* *Metaph.* v. 16, 1021, b, 20 sqq.; *Eth.* ii. 5 *init.* and *passim.* Here, however, where we are dealing with human happiness it can only be a question of spiritual excellences; *Eth. ibid.* 1102, a, 13: περὶ ἀρετῆς δὲ ἐπισκεπτέον ἀνθρωπίνης δῆλον ὅτι. καὶ γὰρ τἀγαθὸν ἀνθρώπινον

twofold nature: intellectual (διανοητική) and moral (ἠθική). The former relates to the activity of reason as such, the latter to the control of the irrational elements of the soul by the rational. The one has its seat in thought, the other in will.[1] Ethics has to do with the latter.[2]

## 2. *Moral Virtue.*

To aid us in the investigation of the nature of Moral Virtue, Aristotle begins by indicating where we must look for virtue in general. It is not an emotion or a mere faculty, but a definite quality of mind (ἕξις).[3] Emotions as such are not the object of

ἐζητοῦμεν καὶ τὴν εὐδαιμονίαν ἀνθρωπίνην. ἀρετὴν δὲ λέγομεν ἀνθρωπίνην οὐ τὴν τοῦ σώματος, ἀλλὰ τὴν τῆς ψυχῆς· καὶ τὴν εὐδαιμονίαν δὲ ψυχῆς ἐνέργειαν λέγομεν.

[1] After discussing (*Eth.* i. 13) the difference between the rational and the irrational element in the soul, and distinguishing two kinds of the rational, that to which rationality attaches in a primitive, and that to which it attaches in a derivative, sense, thought and desire (see p. 114, n. 4, *supra*), Aristotle continues, 1103, a, 3: διορίζεται δὲ καὶ ἡ ἀρετὴ κατὰ τὴν διαφορὰν ταύτην· λέγομεν γὰρ αὐτῶν τὰς μὲν διανοητικὰς τὰς δὲ ἠθικάς, σοφίαν μὲν καὶ σύνεσιν καὶ φρόνησιν διανοητικὰς, ἐλευθεριότητα δὲ καὶ σωφροσύνην ἠθικάς. He returns to this distinction at the beginning of *Eth.* ii. 1, and vi. 2. Ethical virtue is thus regarded as the product of desire ruled by reason, *i.e.* of will (see p. 114, *supra*), a view of it which is consistently maintained throughout.

[2] This is obvious, not only from the name of this science and from isolated statements which describe πρᾶξις as its subject, *e.g.* those referred to p. 181, n. 3, and *Eth.* ii. 2, 1104, a, 1, but from the plan of the *Nicomachean Ethics* as a whole, which must have been different had the object been the proportionate treatment of dianoëtic and ethical virtue. On this point and on the discussion of the dianoëtic virtues in the sixth book, see *infra*.

[3] The relation of these three to one another is explained *Eth.* ii. 4 *init.*: ἐπεὶ οὖν τὰ ἐν τῇ ψυχῇ γινόμενα τρία ἐστί, πάθη δυνάμεις ἕξεις, τούτων ἄν τι εἴη ἡ ἀρετή· λέγω δὲ πάθη μὲν ἐπιθυμίαν, ὀργήν, φόβον, θράσος, φθόνον, χαράν, φιλίαν, μῖσος, πόθον, ζῆλον, ἔλεον, ὅλως οἷς ἕπεται ἡδονὴ ἢ λύπη, δυνάμεις δὲ καθ' ἃς παθητικοὶ τούτων λεγόμεθα,

praise or blame. In themselves they cannot make us either good or bad. They are involuntary, whereas virtue presupposes an activity of the will. They indicate certain movements: virtue and vice, on the other hand, are permanent states. Nor can a mere faculty be the object of moral judgment. Faculty is innate; virtue and vice are acquired.[1] These differ finally from a mere faculty as well as from science (and art) in this, that while the latter embrace both of two opposites, the former refer exclusively to one:[2] the man who has the power and knowledge of good has the power and knowledge of evil also, but he who *wills* the good cannot also at the same time will the evil. It is equally necessary, on the other hand, to distinguish virtue from mere external action as such. He who would act morally must not only do the right, but he must do it in the right frame of mind.[3] It is this, and not the outward effect, that gives to the action its moral worth.[4] It is just this which makes virtue and moral

οἷον καθ' ἃς δυνατοὶ ὀργισθῆναι ἢ λυπηθῆναι ἢ ἐλεῆσαι, ἕξεις δὲ καθ' ἃς πρὸς τὰ πάθη ἔχομεν εὖ ἢ κακῶς. On ἕξις cf. p. 285, n. 3, *supra*.

[1] *Ibid.* 1105, b, 28 sqq., ending with the words: ὅ τι μὲν οὖν ἐστὶ τῷ γένει ἡ ἀρετὴ, εἴρηται. Cf. c. 1, 1103, b, 21 sq.

[2] *Eth.* v. 1, 1129, a, 11: οὐδὲ γὰρ τὸν αὐτὸν ἔχει τρόπον ἐπί τε τῶν ἐπιστημῶν καὶ δυνάμεων καὶ ἐπὶ τῶν ἕξεων. δύναμις μὲν γὰρ καὶ ἐπιστήμη δοκεῖ τῶν ἐναντίων ἡ αὐτὴ εἶναι (see p. 224, n. 3, *supra*), ἕξις δ' ἡ ἐναντία τῶν ἐναντίων οὔ, οἷον ἀπὸ τῆς ὑγιείας οὐ πράττεται τὰ ἐναντία, ἀλλὰ τὰ ὑγιεινὰ μόνον.

[3] *Eth.* ii. 3, 1105, a, 28: τὰ δὲ κατὰ τὰς ἀρετὰς γινόμενα οὐκ ἐὰν αὐτά πως ἔχῃ, δικαίως ἢ σωφρόνως πράττεται, ἀλλὰ καὶ ἐὰν ὁ πράττων πως ἔχων πράττῃ. b, 5: τὰ μὲν οὖν πράγματα δίκαια καὶ σώφρονα λέγεται, ὅταν ᾖ τοιαῦτα οἷα ἂν ὁ δίκαιος ἢ ὁ σώφρων πράξειεν· δίκαιος δὲ καὶ σώφρων ἐστὶν οὐχ ὁ ταῦτα πράττων, ἀλλὰ καὶ ὁ οὕτω πράττων ὡς οἱ δίκαιοι καὶ οἱ σώφρονες πράττουσιν. vi. 13, 1144, a, 13 sqq. Aristotle accordingly distinguishes between the just character and the just act, *ibid.* vi. 10, *init. et al.* (see below).

[4] *Ibid.* iv. 2, 1120, b, 7: οὐ γὰρ ἐν τῷ πλήθει τῶν διδομένων τὸ ἐλευθέριον. ἀλλ' ἐν τῇ τοῦ διδόντος ἕξει, αὕτη δὲ κατὰ τὴν οὐσίαν δίδωσιν.

insight so hard: that we are dealing here, not with particular actions, but with the general character of the actor.[1]

Aristotle defines this character more accurately as a character of the will. In so doing he defines the limits of the moral sphere in both directions, distinguishing moral virtue, which has to do with action, from mere natural and therefore non-moral disposition on the one hand, and from mere knowledge which has no reference to human action on the other. The foundation and presupposition of morality lies in certain natural qualities. In order to be able to act morally, one must first be a man with a certain psychological and physical constitution[2] and with a natural capacity for virtue;[3] for every virtue presupposes certain natural qualities (*φυσικαὶ ἕξεις*), definite impulses and inclinations in which the moral qualities already to a certain extent reside.[4] This natural disposition, how-

[1] *Ibid.* v. 13 *init.*: *οἱ δ' ἄνθρωποι ἐφ' ἑαυτοῖς οἴονται εἶναι τὸ ἀδικεῖν, διὸ καὶ τὸ δίκαιον εἶναι ῥᾴδιον. τὸ δ' οὐκ ἔστιν· συγγενέσθαι μὲν γὰρ τῇ τοῦ γείτονος καὶ πατάξαι τὸν πλησίον καὶ δοῦναι τῇ χειρὶ τὸ ἀργύριον ῥᾴδιον καὶ ἐπ' αὐτοῖς, ἀλλὰ τὸ ὡδὶ ἔχοντας ταῦτα ποιεῖν οὔτε ῥᾴδιον οὔτ' ἐπ' αὐτοῖς. ὁμοίως δὲ καὶ τὸ γνῶναι τὰ δίκαια καὶ τὰ ἄδικα οὐδὲν οἴονται σοφὸν εἶναι, ὅτι περὶ ὧν οἱ νόμοι λέγουσιν οὐ χαλεπὸν ξυνιέναι. ἀλλ' οὐ ταῦτ' ἐστὶ τὰ δίκαια ἀλλ' ἢ κατὰ συμβεβηκός, ἀλλὰ πῶς πραττόμενα καὶ πῶς νεμόμενα δίκαια.* To know this is not an easy matter. On the same ground Aristotle adds that the just man cannot act unjustly. Particular outward acts he might indeed perform, *ἀλλὰ τὸ δειλαίνειν καὶ τὸ ἀδικεῖν οὐ τὸ ταῦτα ποιεῖν ἐστί, πλὴν κατὰ συμβεβηκός, ἀλλὰ τὸ ὡδὶ ἔχοντα ταῦτα ποιεῖν.* Cf. p. 116.

[2] *Polit.* vii. 13, 1332, a, 38.

[3] *Eth.* ii. 1, 1103, a, 23: *οὔτ' ἄρα φύσει οὔτε παρὰ φύσιν ἐγγίνονται αἱ ἀρεταί, ἀλλὰ πεφυκόσι μὲν ἡμῖν δέξασθαι αὐτάς, τελειουμένοις δὲ διὰ τοῦ ἔθους.* *Polit. ibid.*: *ἀγαθοί γε καὶ σπουδαῖοι γίγνονται διὰ τριῶν. τὰ τρία δὲ ταῦτά ἐστι φύσις ἔθος λόγος.*

[4] *Eth.* vi. 13, 1144, b, 4: *πᾶσι γὰρ δοκεῖ ἕκαστα τῶν ἠθῶν ὑπάρχειν φύσει πως· καὶ γὰρ δίκαιοι καὶ σωφρονικοὶ καὶ ἀνδρεῖοι καὶ τἄλλα ἔχομεν εὐθὺς ἐκ γενετῆς.* (*M. Mor.* i. 35, 1197, b, 38, ii. 3, 1199,

ever, is not yet moral. It is found, not only in children, but even in the lower animals.[1] When, therefore, Aristotle speaks of physical virtues, he expressly distinguishes these from virtue in the proper sense of the word,[2] which consists in the union of natural impulse with rational insight and its subordination to it.[3] Natural disposition and the operation of natural impulses do not depend upon ourselves, whereas virtue is in our own power. The former are innate in us; the latter is gradually acquired by practice.[4] Aristotle carries this principle of excluding all involuntary moods and inclinations from the moral sphere so far as to extend it to the earlier stages of the moral life itself. He not only excludes emotions such as fear, anger, pity, &c., from the sphere of praise and blame,[5] but he

b, 38, c. 7, 1206, b, 9.) Cf. *Polit.* vii. 7, on the unequal distribution of moral and intellectual capacity in the different nations.

[1] *H. An.* i. 1, 488, b, 12, viii. 1, ix. 1; see p. 38, n. 1, *supra*; *Eth. ibid.*; see n. 3.

[2] τὸ κυρίως ἀγαθὸν — ἡ κυρία ἀρετὴ, *Eth. ibid.*

[3] *Ibid.* 1144, b, 8: καὶ γὰρ παισὶ καὶ θηρίοις αἱ φυσικαὶ ὑπάρχουσιν ἕξεις, ἀλλ' ἄνευ νοῦ βλαβεραὶ φαίνονται οὖσαι . . . ὥσπερ σώματι ἰσχυρῷ ἄνευ ὄψεως κινουμένῳ συμβαίνει σφάλλεσθαι ἰσχυρῶς διὰ τὸ μὴ ἔχειν ὄψιν, οὕτω καὶ ἐνταῦθα· ἐὰν δὲ λάβῃ νοῦν, ἐν τῷ πράττειν διαφέρει. ἡ δ' ἕξις ὁμοία οὖσα τότ' ἔσται κυρίως ἀρετή.

[4] *Eth.* ii. 1, 1103, a, 17: ἡ δ' ἠθικὴ ἀρετὴ ἐξ ἔθους περιγίνεται, ὅθεν καὶ τοὔνομα ἔσχηκε μικρὸν παρεκκλῖνον ἀπὸ τοῦ ἔθους. ἐξ οὗ καὶ δῆλον ὅτι οὐδεμία τῶν ἠθικῶν ἀρετῶν φύσει ἡμῖν ἐγγίνεται· οὐθὲν γὰρ τῶν φύσει ὄντων ἄλλως ἐθίζεται . . . ἔτι ὅσα μὲν φύσει ἡμῖν παραγίνεται, τὰς δυνάμεις τούτων πρότερον κομιζόμεθα, ὕστερον δὲ τὰς ἐνεργείας ἀποδίδομεν. Sight, for example, we do not receive by perception: it is the antecedent condition of perception. τὰς δ' ἀρετὰς λαμβάνομεν ἐνεργήσαντες πρότερον: we become virtuous by moral, vicious by immoral, action. x. 10, 1179, b, 20 (referring, doubtless, as also does i. 10 *init.*, to PLATO'S *Meno*, 70, A, 99, E): γίνεσθαι δ' ἀγαθοὺς οἴονται οἱ μὲν φύσει, οἱ δ' ἔθει, οἱ δὲ διδαχῇ. τὸ μὲν οὖν τῆς φύσεως δῆλον ὡς οὐκ ἐφ' ἡμῖν ὑπάρχει, ἀλλὰ διά τινας θείας αἰτίας τοῖς ὡς ἀληθῶς εὐτυχέσιν ὑπάρχει. On voluntariness as characteristic of moral virtue, *ibid.* ii. 4, 1106, a, 2, iii. 1 *init.*; c. 4 *init.* and p. 115 sq., *supra*.

[5] *Eth.* ii. 4, 1105, b, 28; see p. 154, n. 1, *supra*.

draws a distinction between continence (ἐγκράτεια) and virtue, incontinence and vice in the stricter sense.[1] In like manner he regards modesty rather as an emotion than as a virtue.[2] In all these states of mind Aristotle fails to find the universality of consciousness—action proceeding from a principle. He holds that nothing is moral which is not done with rational insight, nothing immoral which is not done in defiance of it.

While virtue is impossible without insight, insight and morality are not identical. As will in general consists of the union of reason and desire,[3] the moral quality of the will must be treated under the same category. Moral virtue is concerned with pleasure and pain, since it has to do with actions and emotions which cause these feelings: pleasure and pain are the primary source of desire,[4] and the criterion of all our actions,[5]

[1] *Ibid.* vii. 1, 1145, a, 17, 35; *ibid.* c. 9, 1150, b, 35, 1151, a, 27. Moderation, according to these passages, is a σπουδαία ἕξις, but not an ἀρετή.

[2] *Ibid.* iv. 15, ii. 7, 1108, a, 30: it is praiseworthy, indeed, but not a virtue; it is a μεσότης ἐν τοῖς πάθεσι.

[3] On the will, see pp. 113 sq. and p. 126.

[4] On this cf. also pp. 107 sqq.

[5] *Eth.* ii. 2, 1104, b, 8: περὶ ἡδονὰς γὰρ καὶ λύπας ἐστὶν ἡ ἠθικὴ ἀρετή· διὰ μὲν γὰρ τὴν ἡδονὴν τὰ φαῦλα πράττομεν διὰ δὲ τὴν λύπην τῶν καλῶν ἀπεχόμεθα . . . ἔτι δ' εἰ ἀρεταί εἰσι περὶ πράξεις καὶ πάθη, παντὶ δὲ πάθει καὶ πάσῃ πράξει ἕπεται ἡδονὴ καὶ λύπη, καὶ διὰ τοῦτ' ἂν εἴη ἡ ἀρετὴ περὶ ἡδονὰς καὶ λύπας. All moral failings spring from desire for pleasure and dislike of pain, and for this very reason are to be counteracted by punishments; ἰατρεῖαι γάρ τινές εἰσιν, αἱ δὲ ἰατρεῖαι διὰ τῶν ἐναντίων πεφύκασι γίνεσθαι . . . ὑπόκειται ἄρα ἡ ἡδονὴ εἶναι ἡ τοιαύτη περὶ ἡδονὰς καὶ λύπας τῶν βελτίστων πρακτική, ἡ δὲ κακία τοὐναντίον . . . τριῶν γὰρ ὄντων τῶν εἰς τὰς αἱρέσεις καὶ τριῶν τῶν εἰς τὰς φυγάς, καλοῦ συμφέροντος ἡδέος, καὶ τριῶν τῶν ἐναντίων, αἰσχροῦ βλαβεροῦ λυπηροῦ, περὶ πάντα μὲν ταῦτα ὁ ἀγαθὸς κατορθωτικός ἐστιν ὁ δὲ κακὸς ἁμαρτητικός, μάλιστα δὲ περὶ τὴν ἡδονήν· κοινή τε γὰρ αὕτη τοῖς ζῴοις καὶ πᾶσι τοῖς ὑπὸ τὴν αἵρεσιν παρακολουθεῖ· καὶ γὰρ τὸ καλὸν καὶ τὸ συμφέρον ἡδὺ φαίνεται . . . κανονίζομεν δὲ καὶ τὰς πράξεις, οἱ μὲν μᾶλλον οἱ δ' ἧττον, ἡδονῇ καὶ λύπῃ . . . ὥστε . . . περὶ ἡδονὰς καὶ λύπας πᾶσα ἡ πραγματεία καὶ τῇ ἀρετῇ καὶ τῃ

to which we refer in a certain sense even the motives of utility and right.[1] Aristotle, therefore, controverts the Socratic doctrine that virtue consists in knowledge.[2] His objection to this view is, broadly speaking, that it neglects the irrational element of the soul, the pathological side of virtue.[3] When he proceeds to a closer investigation of its fundamental principle, he shows that it rests on false presuppositions. Socrates had maintained that it was impossible to do evil knowing that it was evil and hurtful;[4] Aristotle shows, on the contrary, that to say this is to overlook the distinction between purely theoretic and practical knowledge. For, in the first place, he remarks, we must distinguish between the possession of knowledge as mere skill, and knowledge as an activity. I may know that a certain action is good or bad, but this knowledge may in the particular case remain latent, and in this way I may do evil without being conscious at the moment that it is evil. But,

πολιτικῇ· ὁ μὲν γὰρ εὖ τούτοις χρώμενος ἀγαθὸς ἔσται, ὁ δὲ κακῶς κακός. II. 5, 1106, b, 16: λέγω δὲ τὴν ἠθικὴν [ἀρετήν]· αὕτη γάρ ἐστι περὶ πάθη καὶ πράξεις. *Ibid.* 1. 24, iii. 1 *init.* (see p. 117, n. 2, *sup.*), vii. 12, 1152, b, 4, 1172, b, 21; x. 7; see p. 143, n. 1, *supra*. *Phys.* vii. 3, 247, a, 23: καὶ τὸ ὅλον τὴν ἠθικὴν ἀρετὴν ἐν ἡδοναῖς καὶ λύπαις εἶναι συμβέβηκεν· ἢ γὰρ κατ' ἐνέργειαν τὸ τῆς ἡδονῆς ἢ διὰ μνήμην ἢ ἀπὸ τῆς ἐλπίδος. *Pol.* viii. 5, 1340, a, 14.

[1] This statement (*Eth.* ii. 2: see preced. *n.*) might seem surprising, as Aristotle draws a very clear distinction between pleasure and the good (*v.* p. 140 sq.). It must be taken, however, in the light of what is said above, p. 149, n. 3. The thought of the good operates upon the will through the medium of feeling, the good presenting itself as something desirable and affording pleasure and satisfaction.

[2] *Eth.* vi. 13, 1144, b, 17 sqq. vii. 5, 1146, b, 31 sqq. cf. c. 3 *init.* x. 10, 1179, b, 23; *Eud.* i. 5, 1216, b, vii. 13 *fin.*; *M. Mor.* i. 1, 1182, a, 15, c. 35, 1198, a, 10.

[3] As may be concluded from the statements in *Eth.* vi. 13, c, 2, 1139, a, 31, and especially *M. M.* i. 1. Cf. p. 157, n. 5, *supra*.

[4] See *Ph. d. Gr.* i. p. 118 sq.

in the second place, concerning the content of this knowledge, we have to distinguish between the general principle and its practical application. For if every action consists in bringing a particular case under a general law,[1] it is quite conceivable that the agent, while he knows and presents to himself the moral law in its universality, yet may neglect the application of it to the particular case and permit himself to be here determined by sensual desire instead of by moral principle.[2] While, therefore, Socrates had asserted that no one is voluntarily wicked, Aristotle maintains, on the contrary, that man is master of his actions, and even makes this voluntariness of action the distinguishing mark of the practical as opposed to the theoretic life.[3] In like manner practical activity is distinguished from artistic. In art the chief thing is knowledge or skill to produce certain works: in conduct, it is will. In the former the object is that the production should be of a certain character; in the latter the essential thing is that the agent himself should be so. There the man who errs intentionally is the better man; here it is the man who errs unintentionally.[4]

Moral activity, then, according to Aristotle,[5] consists in the union of the merely natural activity of impulse with the rational activity of insight, or, more

[1] Cf. p. 110, n. 1, *supra*.

[2] *Eth.* vii. 5, which deals primarily with excess. Another characteristic of action as distinguished from knowledge—which, however, Aristotle does not mention in this connection—has already been mentioned, p. 183, n. 2, and p. 107, n. 2, *supra*.

[3] See pp. 115 sqq. *supra*.

[4] *Eth.* ii. 3 (see i. 6), vi. 5, 1140, b, 22; *Metaph.* vi. 1, 1025, b, 22.

[5] *Eth.* vi. 5, 1140, b, 22 cf. v. i. 1129, a, 83 *Metaph.* v. 29 *fin.*

accurately, in the subordination to reason of that part of the soul which while itself irrational is yet susceptible of rational determination—namely, desire.[1] The ultimate source of moral action is the rational desire or will, and the most essential property of will is the freedom with which it decides between sensual and rational impulses.[2] Morality, however, is only perfect when freedom itself has become a second nature. Virtue is a permanent quality of the will, a habit acquired by free activity: morality has its roots in custom, ἦθος in ἔθος.[3] If we ask, therefore, what is the origin of virtue, the answer is that it comes neither by nature nor by instruction, but by practice. For while natural disposition is the necessary condition, and ethical knowledge the natural fruit of virtue, yet for its essential character as a definite bent of the will virtue is wholly dependent on continued moral activity,[4]

[1] *Eth.* i. 13 *ad fin.*

[2] See also what is said on this subject p. 115 sq.

[3] See p. 153 and p. 156, n. 4, *sup.*

[4] After showing that one becomes moral only by doing moral actions, *Eth.* ii. 1 (see p. 156, n. 4), Aristotle asks whether we do not in making this assertion involve ourselves in a circle, since in order to do moral actions we must apparently be already moral; and answers that it is not so: in a work of art it is sufficient that it should itself be of a certain character, τὰ δὲ κατὰ τὰς ἀρετὰς γινόμενα οὐκ ἐὰν αὐτά πως ἔχῃ δικαίως ἢ σωφρόνως πράττεται, ἀλλὰ καὶ ἐὰν ὁ πράττων πως ἔχων πράττῃ, πρῶτον μὲν ἐὰν εἰδώς, ἔπειτ' ἐὰν προαιρούμενος, καὶ προαιρούμενος δι' αὐτά, τὸ δὲ τρίτον καὶ ἐὰν βεβαίως καὶ ἀμετακινήτως ἔχων πράττῃ . . . πρὸς δὲ τὸ τὰς ἀρετὰς [sc. ἔχειν] τὸ μὲν εἰδέναι μικρὸν ἢ οὐδὲν ἰσχύει, τὰ δ' ἄλλα οὐ μικρὸν ἀλλὰ τὸ πᾶν δύναται, ἅπερ ἐκ τοῦ πολλάκις πράττειν τὰ δίκαια καὶ σώφρονα περιγίνεται. X. 10, 1179, b, 23 (after the words quoted p. 156, n. 4): ὁ δὲ λόγος καὶ ἡ διδαχὴ μήποτ' οὐκ ἐν ἅπασιν ἰσχύῃ, ἀλλὰ δέῃ προδιειργάσθαι τοῖς ἔθεσι τὴν τοῦ ἀκροατοῦ ψυχὴν πρὸς τὸ καλῶς χαίρειν καὶ μισεῖν, ὥσπερ γῆν τὴν θρέψουσαν τὸ σπέρμα· οὐ γὰρ ἂν ἀκούσειε λόγου ἀποτρέποντος οὐδ' αὖ συνείη ὁ κατὰ πάθος ζῶν· τὸν δ' οὕτως ἔχοντα πῶς οἷόν τε μεταπεῖσαι; ὅλως τ' οὐ δοκεῖ λόγῳ ὑπείκειν τὸ πάθος ἀλλὰ βίᾳ· δεῖ δὴ τὸ ἦθος προϋπάρχειν πως

by which that which was at first matter of free resolve becomes an unfailing certainty of character.[1] Even the comprehension of ethical doctrine is conditioned, according to Aristotle, by practice in virtuous action: he who would listen to a moral discourse must be already well practised in virtue. The moral will must precede the knowledge of morals.[2] Virtue, therefore, always presupposes a certain degree of spiritual maturity. Children and slaves have no virtue in the strict sense of the word, for they have no will, or as yet only an imperfect one, and young men are unfit for moral philosophy, because they still lack stability.[3]

Hitherto we have been concerned merely with the form of moral conduct: we as yet know nothing of its contents. Virtue we have found to be a moral quality of the will. We have now to ask what quality of the will is moral? To this Aristotle answers first quite generally: the quality, by means of which man not only becomes himself good, but rightly performs his proper activity.[4] Right activity he further defines as

οἰκεῖον τῆς ἀρετῆς, στέργον τὸ καλὸν καὶ δυσχεραῖνον τὸ αἰσχρόν. Somewhat more is conceded to instruction *Polit.* vii. 13, 1338, a, 38 sqq. Here also φύσις ἔθος λόγος are mentioned as the three sources of virtue; of the last, however, it is remarked: πολλὰ γὰρ παρὰ τοὺς ἐθισμοὺς καὶ τὴν φύσιν πράττουσι διὰ τὸν λόγον, ἐὰν πεισθῶσιν ἄλλως ἔχειν βέλτιον. The divergence, however, is unimportant.—Plato, of whose language we are forcibly reminded in the above passages, had taught that moral habit must precede insight (see *Ph. d. Gr.* i. pp. 532 sq.); Aristotle differs from him merely in distinguishing the higher virtue of the philosopher from that of habit, while Plato limits moral virtue to this source.

[1] *Ibid.* ii. 3 (see preced. n.): it is a property of virtue βεβαίως καὶ ἀμετακινήτως ἔχειν. Cf. *De Mem.* c. 2, 452, a, 27: ὥσπερ γὰρ φύσις ἤδη τὸ ἔθος, and p. 116, n. 3, *supra.*

[2] *Eth.* i. 1, 2, 1094, b, 27 sqq. 1095, a, 4, vi. 13, 1144, b, 30.

[3] *Ibid.* i. 1 with the words: διαφέρει δ' οὐθὲν νέος τὴν ἡλικίαν ἢ τὸ ἦθος νεαρός: c. 10, 1100, a, 1, *Polit.* i. 13, 1260, a, 12 sqq. 31.

[4] *Ibid.* ii. 5: ῥητέον οὖν ὅτι

that which avoids the extremes of excess and defect, and thus preserves the proper mean:[1] and conversely, wrong activity is that which deviates on one side or the other from this boundary line.[2] In further determining the nature and position of the 'proper mean,' we have to take into account, not merely the object of our action, but, what is much more important, our own personal nature.[3] The problem of morality is to strike the proper mean relating to ourselves: in feeling and action neither to overstep or fall short of the limit set by the character of the agent, the object and the circumstances.[4] Aristotle admits, indeed, that this description

πᾶσα ἀρετή, οὗ ἂν ᾖ ἀρετή, αὐτό τε εὖ ἔχον ἀποτελεῖ καὶ τὸ ἔργον αὐτοῦ εὖ ἀποδίδωσιν . . . εἰ δὴ τοῦτ' ἐπὶ πάντων οὕτως ἔχει, καὶ ἡ τοῦ ἀνθρώπου ἀρετὴ εἴη ἂν ἕξις ἀφ' ἧς ἀγαθὸς ἄνθρωπος γίνεται καὶ ἀφ' ἧς εὖ τὸ ἑαυτοῦ ἔργον ἀποδώσει.

[1] *Ibid.* 1106, b, 8: εἰ δὴ πᾶσα ἐπιστήμη οὕτω τὸ ἔργον εὖ ἐπιτελεῖ, πρὸς τὸ μέσον βλέπουσα καὶ εἰς τοῦτο ἄγουσα τὰ ἔργα (. . . ὡς τῆς μὲν ὑπερβολῆς καὶ τῆς ἐλλείψεως φθειρούσης τὸ εὖ, τῆς δὲ μεσότητος σωζούσης) . . . ἡ δ' ἀρετὴ πάσης τέχνης ἀκριβεστέρα καὶ ἀμείνων ἐστίν, ὥσπερ καὶ ἡ φύσις, τοῦ μέσου ἂν εἴη στοχαστική.

[2] Aristotle remarks that either the virtue or the vice have not unfrequently no name to designate them in common language; *Eth.* ii. 7, 1107, b, 1, 7, 30, 1108, a, 5, 16, iii. 10, 1115, b, 25, c. 14, 1119, a, 10, iv. 1, 1119, b, 34, c. 10 sq., 1125, b, 17, 26, c. 12, 1126, b, 19, c. 13, 1127, a, 14.

[3] *Ibid.* 1106, a, 26: ἐν παντὶ δὴ συνεχεῖ καὶ διαιρετῷ ἔστι λαβεῖν τὸ μὲν πλεῖον τὸ δ' ἔλαττον τὸ δ' ἴσον, καὶ ταῦτα ἢ κατ' αὐτὸ τὸ πρᾶγμα ἢ πρὸς ἡμᾶς· τὸ δ' ἴσον μέσον τι ὑπερβολῆς καὶ ἐλλείψεως. λέγω δὲ τοῦ μὲν πράγματος μέσον τὸ ἴσον ἀπέχον ἀφ' ἑκατέρου τῶν ἄκρων, ὅπερ ἐστὶν ἓν καὶ ταὐτὸν πᾶσι, πρὸς ἡμᾶς δὲ ὃ μήτε πλεονάζει μήτε ἐλλείπει. τοῦτο δ' οὐχ ἓν οὐδὲ ταὐτὸν πᾶσιν. If, for example, two cutlets are too little food, while ten are too much, the μέσον κατὰ τὸ πρᾶγμα would be six: this amount, however, might be too much for one, too little for another: οὕτω δὴ πᾶς ἐπιστήμων τὴν ὑπερβολὴν μὲν καὶ τὴν ἔλλειψιν φεύγει, τὸ δὲ μέσον ζητεῖ καὶ τοῦθ' αἱρεῖται, μέσον δὲ οὐ τὸ τοῦ πράγματος ἀλλὰ τὸ πρὸς ἡμᾶς.

[4] *Ibid.* 1106, b, 16 (after the words quoted in n. 1, *supra*): λέγω δὲ τὴν ἠθικὴν [ἀρετήν]· αὕτη γάρ ἐστι περὶ πάθη καὶ πράξεις, ἐν δὲ τούτοις ἐστὶν ὑπερβολὴ καὶ ἔλλειψις καὶ τὸ μέσον. οἷον καὶ φοβηθῆναι καὶ θαρρῆσαι καὶ ἐπιθυμῆσαι καὶ ὀργισθῆναι καὶ ἐλεῆσαι καὶ ὅλως ἡσθῆναι καὶ λυπηθῆναι ἔστι καὶ μᾶλλον καὶ ἧττον, καὶ ἀμφότερα οὐκ εὖ· τὸ δ' ὅτε δεῖ καὶ ἐφ' οἷς καὶ πρὸς οὓς καὶ οὗ ἕνεκα καὶ ὡς δεῖ,

is still a very general one, and that we have to look closer if we would discover the proper mean, and with it the right criterion of action (the *ὀρθὸς λόγος*);[1] but he can only here refer us to practical insight, whose business it is to mark out what is right in particular cases; and he therefore defines virtue as 'that quality of the will which preserves the mean suitably to our nature, conformably to a reasonable definition, such as the man of insight would give.'[2]

From this point of view Aristotle goes on to deal with the particular virtues, without any attempt to deduce them from any one definite principle. Even the suggestions towards such a deduction which were to be found in his own theory as above stated, he left on one side. Seeing that he had investigated the idea of 'Happiness,' and had found in 'Virtue' the essential means thereto, he might have made an attempt to define the various kinds of activity which enable us to reach this end, and so have sought to arrive at the main kinds of 'Virtue.' He does, however, nothing of the kind. Even where he gives us certain indications of the points of view from which he deals with the order of the

*μέσον τε καὶ ἄριστον, ὅπερ ἐστὶ τῆς ἀρετῆς. ὁμοίως δὲ καὶ περὶ τὰς πράξεις ἐστὶν ὑπερβολὴ καὶ ἔλλειψις καὶ τὸ μέσον . . . . μεσότης τις ἄρα ἐστὶν ἡ ἀρετή, στοχαστική γε οὖσα τοῦ μέσου.* Cf. foll. n.

[1] *Eth.* vi. 1: we ought to choose, as before remarked (ii. 5) the *μέσον*, not the *ὑπερβολὴ* or *ἔλλειψις—τὸ δὲ μέσον ἐστὶν ὡς ὁ λόγος ὁ ὀρθὸς λέγει.* In everything *ἐστί τις σκοπὸς πρὸς ὃν ἀποβλέπων ὁ τὸν λόγον ἔχων ἐπιτείνει καὶ ἀνίησιν, καί τις ἐστὶν ὅρος τῶν μεσοτήτων, ἃς μεταξύ φαμεν εἶναι τῆς ὑπερβολῆς καὶ τῆς ἐλλείψεως, οὔσας κατὰ τὸν ὀρθὸν λόγον. ἔστι δὲ τὸ μὲν εἰπεῖν οὕτως ἀληθὲν μὲν, οὐθὲν δὲ σαφές . . . διὸ δεῖ καὶ περὶ τὰς τῆς ψυχῆς ἕξεις μὴ μόνον ἀληθὲς εἶναι τοῦτ' εἰρημένον, ἀλλὰ καὶ διωρισμένον τίς τ' ἐστὶν ὁ ὀρθὸς λόγος καὶ τούτου τίς ὅρος.*

[2] *Ibid.* ii. 6 *init.*: *ἔστιν ἄρα ἡ ἀρετὴ ἕξις προαιρετικὴ ἐν μεσότητι οὖσα τῇ πρὸς ἡμᾶς, ὡρισμένη λόγῳ καὶ ὡς ἂν ὁ φρόνιμος ὁρίσειεν.*

ethical virtues in his treatment of them, these points of view are themselves in no way based on any principle.[1]

[1] After defining virtue as μεσότης, Aristotle continues, *Eth.* ii. 7: from the general statement we must turn to particular instances of the principle. περὶ μὲν οὖν φόβους καὶ θάρρη ἀνδρεία μεσότης . . . . περὶ ἡδονὰς δὲ καὶ λύπας [those, *i.e.*, as is here hinted, and definitely stated in iii. 13, 1117, b, 27 sqq. of ἁφὴ and γεῦσις] σωφροσύνη . . . . περὶ δὲ δόσιν χρημάτων καὶ λῆψιν . . . ἐλευθριότης; to these belongs also μεγαλοπρέπεια· περὶ δὲ τιμὴν καὶ ἀτιμίαν . . . μεγαλοψυχία, and the corresponding anonymous virtue the ὑπερβολὴ of which is ambition. ἔστι δὲ καὶ περὶ ὀργὴν . . . μεσότης, which he calls πρᾳότης. Furthermore, there are three μεσότητες which relate to κοινωνία λόγων καὶ πράξεων, one to τὸ ἀληθὲς in these (ἀλήθεια), the two others to τὸ ἡδὺ, the one (p. 169, n. 6, *infra*), ἐν παιδιᾷ, the other (p. 169, n. 4, *infra*), ἐν πᾶσι τοῖς κατὰ τὸν βίον. Of bravery and σωφροσύνη it is further remarked, iii. 13: δοκοῦσι γὰρ τῶν ἀλόγων μερῶν αὗται εἶναι αἱ ἀρεταί. This classification, however, is a loose one, nor is any clearly defined principle discoverable in it. HÄCKER'S attempt in his interesting essay (*Das Eintheilungs- und Anordnungsprincip der moralischen Tugendreihe in der nikomachischen Ethik*, Berl. 1863) to show that Aristotle is guided by such a principle imports, apparently, more into his account than is admissible. According to this view, Aristotle intended to indicate in the first place those virtues which consist in the subordination of the lower instincts that are concerned with the mere defence and maintenance of life: bravery the virtue of θυμὸς, temperance the virtue of ἐπιθυμία. The second group of virtues (liberality, love of honour, gentleness, and justice, which is placed last for special reasons) have for the sphere of their exercise political life in time of peace, and the part which the individual takes in affairs of state, as well as the positions he occupies in it; the third the amenity of life, τὸ εὖ ζῆν. But it is impossible to show that Aristotle founds his classification of the virtues upon this scheme. In the first place, the reason which he himself gives for connecting bravery and self-command with one another is that they stand for the virtues of the irrational parts of a man; this is only to say (unless, with RAMSAUER, we reject the words altogether) that it is suitable to discuss self-command along with bravery because it has been customary since the time of Plato to name these two together as the virtues of θυμὸς and τὸ ἐπιθυμητικὸν respectively. Had he been governed by those principles of classification which Häcker ascribes to him, he must have classed πρᾳότης along with bravery. If the latter is the subordination of the instinct of self, the former is (iv. 11) the μεσότης περὶ ὀργάς: but anger springs from the instinct of revenge, which, like bravery, has

There is therefore nothing for us to do but to set out, without reference to any exact logical connection, what Aristotle has himself said as to those virtues which he enumerates.

The preliminary proposition, that there are more

its seat in θυμὸς (iv. 11, 1126, a, 19 sqq.; *Rhet.* ii. 2 *init.* 12, 1389, a, 26: καὶ ἀνδρειότεροι [οἱ νέοι]· θυμώδεις γὰρ . . . οὔτε γὰρ ὀργιζόμενος οὐδεὶς φοβεῖται, cf. p. 583, 2), and which, like it (*Eth.* iii. 11, 1116, b, 23 sqq.), we share with the brutes. Anger and bravery, therefore, are so closely related that it is often difficult to distinguish them from one another (*Eth.* ii. 9, 1109, b, 16 sqq., iv. 11, 1126, b, 1, cf. *Rhet.* ii. 5, 1383, b, 7), and in *Rhet.* ii. 8, 1385, b, 30, anger is even called a πάθος ἀνδρίας. If, notwithstanding this relationship, the μεσότης περὶ τὰς ὀργὰς is said to belong to a different group of virtues from bravery, on the ground that the latter springs only from the instinct 'to preserve the vegetative life,' while anger is concerned chiefly with injuries inflicted upon the honour of a citizen (HÄCKER, p. 15, 18), this is scarcely consistent with the statements of Aristotle. *Eth.* iv. 11, 1125, b, 30, he says expressly of anger: τὰ δὲ ἐμποιοῦντα πολλὰ καὶ διαφέροντα, and, on the other hand, of bravery, that it does not consist in not fearing death under any circumstances, but in not fearing death ἐν τοῖς καλλίστοις, especially in war (iii. 9, 1115, a, 28), which has a much more direct relation to political life than the loss of merely personal honour. So far indeed, is Aristotle from seeing in bravery only the μεσότης of an animal instinct, in anger that is properly directed and controlled that of a higher instinct which is concerned with civil life, that he declares (*Eth.* iii. 11, 1116, b, 23–1117, a, 9): when men despise danger from anger or desire for revenge (ὀργιζόμενοι, τιμωρούμενοι) they can no more be called brave than an animal when it rushes in rage [διὰ τὸν θυμὸν, which here hardly differs from ὀργὴ] upon the huntsman who has wounded it. Nor does the position assigned to the virtues which are concerned with the use of money admit of being explained on the ground that riches always secure a certain social station to its possessor (HÄCKER, p. 16), for there is no allusion in Aristotle to this point of view, although in the case of μεγαλοπρέπεια (not, however, of ἐλευθεριότης) mention is made, among other things, of expenditure for public purposes. If, on the other hand, this had been the principle of classification, bravery in war would have found a place in this group. Finally, it cannot be said that the third group concerns τὸ εὖ ζῆν any more closely than the other two; for εὖ ζῆν in the Aristotelian sense, self-command, liberality and justice, are certainly more important than τὸ ἡδὺ ἐν παιδιᾷ.

virtues than one, is established by Aristotle, against the position of Socrates, who had reduced them all to 'Insight.' Aristotle himself admits that all completed Virtue is in its essence and principle one and the same, and that with Insight all other virtues are given.[1] Yet at the same time he shows that the natural basis of virtue—the moral circumstances—must be different in different cases. The will of the slave, for example, is different from the will of the freeman: the will of the woman and the child is not the same as the will of the adult man. Therefore he holds that the moral activity of different individuals must be different. Not only will one individual possess a particular virtue which others do not possess, but it is also true that different demands must be made on each particular class of men.[2] Aristotle says very little (and that not in his *Ethics*, but in his *Œconomics*) of the virtues of the

[1] *Eth.* vi. 13, 1144, b, 31: *οὐχ οἷόν τε ἀγαθὸν εἶναι κυρίως ἄνευ φρονήσεως, οὐδὲ φρόνιμον ἄνευ τῆς ἠθικῆς ἀρετῆς.* It appears, indeed, as though the virtues could be separated from one another; *οὐ γὰρ ὁ αὐτὸς εὐφυέστατος πρὸς ἁπάσας, ὥστε τὴν μὲν ἤδη τὴν δ' οὔπω εἰληφὼς ἔσται.* This is not really so: *τοῦτο γὰρ κατὰ μὲν τὰς φυσικὰς ἀρετὰς ἐνδέχεται, καθ' ἃς δὲ ἁπλῶς λέγεται ἀγαθὸς, οὐκ ἐνδέχεται· ἅμα γὰρ τῇ φρονήσει μιᾷ οὔσῃ πᾶσαι ὑπάρξουσιν.*

[2] See preceding n. and *Polit.* vi. 13, 1260, a, 10: *πᾶσιν ἐνυπάρχει μὲν τὰ μόρια τῆς ψυχῆς, ἀλλ' ἐνυπάρχει διαφερόντως . . . ὁμοίως τοίνυν ἀναγκαῖον ἔχειν καὶ περὶ τὰς ἠθικὰς ἀρετάς· ὑποληπτέον δεῖν μὲν μετέχειν πάντας, ἀλλ' οὐ τὸν αὐτὸν τρόπον, ἀλλ' ὅσον ἑκάστῳ πρὸς τὸ αὑτοῦ ἔργον. διὸ τὸν μὲν ἄρχοντα τελέαν ἔχειν δεῖ τὴν ἠθικὴν ἀρετὴν, . . . τῶν δ' ἄλλων ἕκαστον ὅσον ἐπιβάλλει αὐτοῖς. ὥστε φανερὸν ὅτι ἐστὶν ἠθικὴ ἀρετὴ τῶν εἰρημένων πάντων. καὶ οὐχ ἡ αὐτὴ σωφροσύνη γυναικὸς καὶ ἀνδρός,* &c. Although it is not here said that one virtue can exist without the others, and although on the other hand, this is admitted *Eth.* vi. 13 to be the case only with the physical virtues, yet the imperfect virtue of slaves or women must be regarded as an incomplete and partial possession, which excludes the comprehensive virtue of insight, and therefore extends to some and not to others.

several classes. In the *Ethics* he treats of Virtue in its perfected form, which it assumes in man, whom alone he elsewhere regards as the perfect type of humanity, and it is of this alone that he describes the constituent parts.

Bravery[1] stands at the head of the list of the virtues. He is brave who does not fear a glorious death or the near danger of death, or more generally he who endures, dares or fears what he ought to, for the right object, in the right way and at the right time.[2] The extremes between which Bravery stands as the mean are: on the one side Insensibility and Foolhardiness, and on the other Cowardice.[3] Nearly related to Bravery, but not to be identified with it, are Civil Courage and the courage which springs from compulsion, or anger, or the wish to escape from a pain,[4] or which is founded upon familiarity with the apparently terrible or upon the hope of a favourable result.[5] Self-control[6] follows as the second virtue, which, however, Aristotle limits to the preserva-

[1] *Eth.* iii. 9–12.

[2] C. 9, 1115, a, 33: *ὁ περὶ τὸν καλὸν θάνατον ἀδεὴς καὶ ὅσα θάνατον ἐπιφέρει ὑπόγυια ὄντα.* c. 10, 1115, b, 17: *ὁ μὲν οὖν ἃ δεῖ καὶ οὗ ἕνεκα ὑπομένων καὶ φοβούμενος, καὶ ὡς δεῖ καὶ ὅτε, ὁμοίως δὲ καὶ θαρρῶν, ἀνδρεῖος· κατ' ἀξίαν γὰρ, καὶ ὡς ἂν ὁ λόγος, πάσχει καὶ πράττει ὁ ἀνδρεῖος . . . καλοῦ δὴ ἕνεκα ὁ ἀνδρεῖος ὑπομένει καὶ πράττει τὰ κατὰ τὴν ἀνδρείαν.* Cf. *Rhet.* i. 9, 1366, b, 11.

[3] C. 10, 1115, b, 24 sqq.

[4] As in suicide, which Aristotle therefore regards as a mark of cowardice; iii. 11, 1116, a, 12, cf. ix. 4, 1166, b, 11.

[5] C. 88 (where, however, 1117, a, 20, the words *ἢ καὶ* must be omitted). Of these, *πολιτικὴ ἀνδρεία* most closely resembles true bravery (1116, a, 27), *ὅτι δι' ἀρετὴν γίνεται· δι' αἰδῶ γὰρ καὶ διὰ καλοῦ ὄρεξιν (τιμῆς γὰρ) καὶ φυγὴν ὀνείδους αἰσχροῦ ὄντος.* Nevertheless Aristotle distinguishes between them, *πολιτικὴ ἀνδρεία* being heteronomous to the extent that the brave deed is not done for its own sake.

[6] *Σωφροσύνη*, c. 13–15, in contrast to *ἀκολασία* and to a species of insensibility for which there is no name, as it is not found among men (c. 14, 1119, a, 9; cf. vii. 11 *init.*: Aristotle would perhaps have ascribed this failing, of which he says, *εἰ δέ τῳ μηθέν ἐστιν ἡδὺ μηδὲ διαφέρει ἕτερον ἑτέρου, πόρρω ἂν εἴη τοῦ*

tion of the proper mean in the pleasures of touch and in the satisfaction of the merely animal and sexual impulses. Next comes Generosity,[1] as the proper mean between Avarice and Extravagance,[2] the attitude in giving and taking external goods which is at once moral and worthy of a free man,[3] and the kindred virtue of Munificence in expenditure.[4] Magnanimity[5] (in his

ἄνθρωπος εἶναι, to the Ascetics of a later time); cf. vii. 8, 1150, a, 19 sqq. and the passages referred to below from book vii. upon ἐγκράτεια and ἀκρασία; *Rhet. ibid* l. 13. In the words with which he opens this discussion, μετὰ δὲ ταύτην [bravery] περὶ σωφροσύνης λέγωμεν· δοκοῦσι γὰρ τῶν ἀλόγων μερῶν αὗται εἶναι αἱ ἀρεταί, Aristotle is referring to Plato's doctrine; he himself has no reason to ascribe bravery, any more than moral virtue as a whole, to the irrational element in the soul.

[1] Or, more correctly, liberality, ἐλευθεριότης.

[2] Ἀνελευθερία and ἀσωτία. The worse and more incurable of these faults is avarice, *Eth.* iv. 3, 1121, a, 19 sqq.

[3] *Eth.* iv. 1–3. The noble spirit in which Aristotle handles this subject may be seen, among other passages, in c. 2 *init.*: αἱ δὲ κατ' ἀρετὴν πράξεις καλαὶ καὶ τοῦ καλοῦ ἕνεκα. καὶ ὁ ἐλευθέριος οὖν δώσει τοῦ καλοῦ ἕνεκα καὶ ὀρθῶς . . . καὶ ταῦτα ἡδέως ἢ ἀλύπως· τὸ γὰρ κατ' ἀρετὴν ἡδὺ ἢ ἄλυπον, ἥκιστα δὲ λυπηρόν ὁ δὲ διδοὺς οἷς μὴ δεῖ, ἢ μὴ τοῦ καλοῦ ἕνεκα ἀλλὰ διά τιν' ἄλλην αἰτίαν, οὐκ ἐλευθέριος ἀλλ' ἄλλος τὶς ῥηθήσεται. οὐδ' ὁ λυπηρῶς· μᾶλλον γὰρ ἕλοιτ' ἂν τὰ χρήματα τῆς καλῆς πράξεως, τοῦτο δ' οὐκ ἐλευθερίου.

[4] Μεγαλοπρέπεια, *ibid.* 4–6, which is defined, 1122, a, 23, by the words ἐν μεγέθει πρέπουσα δαπάνη: it stands midway between μικροπρέπεια, on the one hand, and βαναυσία and ἀπειροκαλία on the other. It differs from ἐλευθεριότης in having to do, not only with the right and proper, but with the sumptuous expenditure of money (iv. 4, 1122, b, 10 sqq., where, however, l. 18, we shall have to read, with Cod. $L^b$ $M^b$, καὶ ἔστιν ἔργου μεγαλοπρέπεια ἀρετὴ ἐν μεγέθει: 'μεγαλοπρέπεια is excellence of work in great matters,' and explain l. 12 as meaning either 'the magnitude here is contributed by the μεγαλοπρεπής, being a sort of greatness of liberality in respect to the same objects,' or 'it is the magnitude here which constitutes, so to speak, the greatness in the munificence, &c.;' unless we prefer the surmise of RASSOW, *Forsch. üb. d. nikom. Ethik.* 82, who inserts 'λαβούσης' after μέγεθος, which might easily have fallen out owing to the οὔσης which follows, so that the meaning is 'liberality which is directed to the same object attaining a sort of grandeur'). *Rhet.* i. 9, 1366, b, 18.

[5] Μεγαλοψυχία as midway be-

description of which Aristotle has, perhaps, before his mind the example of his great pupil), honourable ambition,[1] Gentleness,[2] the social virtues[3] of Amiability,[4] Simplicity,[5] Geniality[6] in company follow: and to these are added the graces of temperament,[7] Modesty,[8] and righteous Indignation.[9]

tween meanness of spirit (μικροψυχία) and vanity (χαυνότης), iv. 7–9; *Rhet. ibid.* Μεγαλόψυχος is (1123, b, 2) ὁ μεγάλων αὑτὸν ἀξιῶν ἄξιος ὤν: this virtue, therefore, always presupposes actual excellence.

[1] This virtue is described, *Eth.* iv. 10, as the mean between φιλοτιμία and ἀφιλοτιμία, which is related to μεγαλοψυχία as ἐλευθεριότης is to μεγαλοπρέπεια, but for which there is no proper word.

[2] The μεσότης περὶ ὀργάς, iv. 11. Aristotle calls this virtue πρᾳότης, the corresponding vices ὀργιλότης and ἀοργησία, remarking, however, that all these names are coined by him for the purpose. The πρᾶος is accordingly defined as ὁ ἐφ' οἷς δεῖ καὶ οἷς δεῖ ὀργιζόμενος, ἔτι δὲ καὶ ὡς δεῖ καὶ ὅτε καὶ ὅσον χρόνον. *Ibid.* on the ἀκρόχολος and the χαλεπός.

[3] Which Aristotle himself, iv. 14 *fin.*, comprises under this title.

[4] Using the word to designate the nameless virtue which, *Eth.* iv. 12, is opposed on the one side to complaisance and flattery, on the other to unsociableness and moroseness, and described as the social tact which knows ὁμιλεῖν ὡς δεῖ. Aristotle there remarks that it closely resembles φιλία, but differs from it in not resting upon inclination or dislike towards particular persons. *Eud.* iii. 7, 1233, b, 29, it is simply called φιλία.

[5] The likewise nameless mean between vain-boasting (ἀλαζονεία) and self-depreciation (εἰρωνεία, of which the extreme is seen in the βαυκοπανοῦργος), iv 13.

[6] Εὐτραπελία or ἐπιδεξιότης (iv. 14), the opposites being βωμολοχία and ἀγριότης. Here also it is a question of social tact (cf. 1128, b, 31: ὁ δὴ χαρίεις καὶ ἐλευθέριος οὕτως ἕξει, οἷον νόμος ὢν ἑαυτῷ), with especial reference, however, to the entertainment of society.

[7] Μεσότητες ἐν τοῖς πάθεσι καὶ ἐν τοῖς περὶ τὰ πάθη (ii. 7, 1108, a, 30), called μεσότητες παθητικαί, *Eud.* iii. 7 *init.* Among these, *Eud.* iii. 7 classes also φιλία, σεμνότης, ἀλήθεια, and ἁπλότης, εὐτραπελία.

[8] Αἰδώς. See *Eth.* iv. 15, ii. 7 (p. 157, n. 2, *supra*). The modest man, according to these passages, is the mean between the shameless and the bashful man (καταπλήξ). Modesty, however, is not so much a virtue in the proper sense as a praiseworthy affection suitable only for youth, as the adult should do nothing of which he requires to be ashamed.

[9] Only in ii. 7, 1108, a, 35 sqq., where it is described as μεσότης φθόνου καὶ ἐπιχαιρεκακίας;

Justice, however, claims the fullest treatment, and Aristotle has devoted to it the whole of the fifth book of his *Ethics*.[1] Considering the close connection between the *Ethics* and the *Politics*, it was necessary that special attention should be paid to the virtue upon which the maintenance of the commonwealth most directly depends. Justice, however, is not here to be understood in the wider sense in which it is equivalent to social virtue as a whole,[2] but in its narrower meaning, as that virtue which has to do with the distribution of goods, the preservation, namely, of the proper mean[3] or proportion in assigning advantages or disadvantages.[4]

it concerns joy and sorrow at the fortunes of others, and consists in τὸ λυπεῖσθαι ἐπὶ τοῖς ἀναξίως εὖ πράττουσιν. Similarly *Rhet.* ii. 9 *init.*

[1] Cf. on this subject: H. FECHNER, *Ueber den Gerechtigkeitsbegriff d. Arist.* (Lpz. 1855), pp. 27–56; HILDENBRAND, *Gesch. u. System d. Rechts- und Staatsphilosophie*, i. 281–331, who also cites other literature; PRANTL in BLUNTSCHLI'S *Staatswörterbuch*, i. 351 sqq.; TRENDELENBURG, *Hist. Beitr.* iii. 399 sqq.

[2] Τὰ ποιητικὰ καὶ φυλακτικὰ τῆς εὐδαιμονίας καὶ τῶν μορίων αὐτῆς τῇ πολιτικῇ κοινωνίᾳ—the ἀρετὴ τελεία, ἀλλ' οὐχ ἁπλῶς ἀλλὰ πρὸς ἕτερον, of which it is said that it is οὐ μέρος ἀρετῆς ἀλλ' ὅλη ἀρετὴ, οὐδ' ἡ ἐναντία ἀδικία μέρος κακίας ἀλλ' ὅλη κακία . . . ἡ μὲν τῆς ὅλης ἀρετῆς οὖσα χρῆσις πρὸς ἄλλον, ἡ δὲ τῆς κακιας (*Eth.* v. 3, 1129, b, 17, 25 sqq. 1130, a, 8, c. 5, 1130, b, 18).

[3] For 'the mean,' as in the case of every other virtue, is here the highest criterion; cf. *Eth.* v. 6 *init.*: ἐπεὶ δ' ὅ τ' ἄδικος ἄνισος καὶ τὸ ἄδικον ἄνισον, δῆλον ὅτι καὶ μέσον τί ἐστι τοῦ ἀνίσου· τοῦτο δ' ἐστὶ τὸ ἴσον . . . εἰ οὖν τὸ ἄδικον ἄνισον, τὸ δίκαιον ἴσον. c. 9 *init.*

[4] As the distinguishing mark of ἀδικία in this narrower sense, πλεονεκτεῖν is mentioned (c. 4) περὶ τιμὴν ἢ χρήματα ἢ σωτηρίαν, ἢ εἴ τινι ἔχοιμεν ἑνὶ ὀνόματι περιλαβεῖν ταῦτα πάντα, καὶ δι' ἡδονὴν τὴν ἀπὸ τοῦ κέρδους; it consists (c. 10, 1134, a, 33) in τὸ πλέον αὑτῷ νέμειν τῶν ἁπλῶς ἀγαθῶν. ἔλαττον δὲ τῶν ἁπλῶς κακῶν. Of justice, on the other hand, it is said, c. 9, 1134, a, 1: καὶ ἡ μὲν δικαιοσύνη ἐστὶ καθ' ἣν ὁ δίκαιος λέγεται πρακτικὸς κατὰ προαίρεσιν τοῦ δικαίου, καὶ διανεμητικὸς καὶ αὑτῷ πρὸς ἄλλον καὶ ἑτέρῳ πρὸς ἕτερον, οὐχ οὕτως ὥστε τοῦ μὲν αἱρετοῦ πλέον αὑτῷ ἔλαττον δὲ τῷ πλησίον, τοῦ βλαβεροῦ δ' ἀνάπαλιν, ἀλλὰ τοῦ ἴσου τοῦ κατ' ἀναλογίαν, ὁμοίως δὲ καὶ ἄλλῳ πρὸς ἄλλον. It is (*Rhet.* i. 9, 1366, b, 9) ἀρετὴ

But this proportion will be different according as we are dealing with the distribution of civil advantages and the common property, which is the function of distributive justice, or with the removal and prevention of wrongs, which is the function of corrective justice.[1] In both cases the distribution of goods according to the law of quality must be the aim.[2] But this law demands in the former case that each should receive, not an equal amount, but an amount proportionate to his deserts. The distribution, therefore, is here made in a geometrical proportion: as the merits of A are to those of B, so is the honour or advantage which A receives to that which B receives.[3] In the other case, which relates to the correction of inequalities produced by wrong, and to contracts, there is no question of the merits of the individual. Everyone who has done wrong must suffer loss in proportion to the unjust profit which he has appropriated; there is subtracted from his gains an amount equivalent to the loss of the man who has suffered the wrong.[4] In like manner, in buying and

*δι' ἣν τὰ αὑτῶν ἕκαστοι ἔχουσιν.* Right and justice, therefore, find a place only among beings who, like man, may possess too much or too little—not among those who, like the gods, are confined to no limit in this respect, or who, like the incurably bad, are incompetent to possess anything at all; *Eth.* v. 13, 1137, a, 26.

[1] We should speak rather of public and private right.

[2] *Δίκαιον* in this sense = *ἴσον*, *ἄδικον* = *ἄνισον*: in the wider sense, on the other hand, the former = *νόμιμον*, the latter = *παράνομον* (v. 5; cf. TRENDELENBURG, *Hist. Beitr.* ii. 357 sqq.; BRANDIS, p. 1421 sq.; RASSOW, *Forsch. üb. d. nikom. Eth.* 17, 93).

[3] This is referred to *Polit.* iii. 9, 1280, a, 16. Conversely of public burdens, each would have to take his share according to his capacity for discharging them. Aristotle, however, does not touch upon this point, although he must have had it in view, *Eth.* v. 7, 1131, b, 20, where he speaks of the *ἔλαττον* and *μεῖζον κακόν*.

[4] By *κέρδος* (advantage or gain) and *ζημία* (disadvantage or loss) Aristotle means in this connection, as he remarks, *Eth.* v

selling, renting, letting, &c., it is a question merely of the value of the article. Here, therefore, the rule is that of arithmetical equality: from him who has too much an amount is taken which will render both sides equal.[1] In matters of exchange this equality consists in equality of value.[2] The universal measure of value is

7, 1132, a, 10, not merely what is commonly understood by them. As he comprehends under corrective justice not only penal but also civil law, as well as the law of contract, he has greatly to extend the customary signification of the words in order to include these different conceptions under a common form of expression. Accordingly he classes every injustice which anyone commits as κέρδος, every injustice which anyone suffers as ζημία.

[1] *Ibid.* c. 5–7, especially c. 5, 1130, b, 30: τῆς δὲ κατὰ μέρος δικαιοσύνης καὶ τοῦ κατ' αὐτὴν δικαίου ἓν μέν ἐστιν εἶδος τὸ ἐν ταῖς διανομαῖς τιμῆς ἢ χρημάτων ἢ τῶν ἄλλων ὅσα μεριστὰ τοῖς κοινωνοῦσι τῆς πολιτείας, . . . ἓν δὲ τὸ ἐν τοῖς συναλλάγμασι διορθωτικόν. τούτου δὲ μέρη δύο· τῶν γὰρ συναλλαγμάτων τὰ μὲν ἑκούσιά ἐστι τὰ δ' ἀκούσια, ἑκούσια μὲν τὰ τοιάδε οἷον πρᾶσις, ὠνή, δανεισμός, ἐγγύη, χρῆσις, παρακαταθήκη, μίσθωσις· ἑκούσια δὲ λέγεται, ὅτι ἡ ἀρχὴ τῶν συναλλαγμάτων τούτων ἑκούσιος. τῶν δ' ἀκουσίων τὰ μὲν λαθραῖα, οἷον κλοπή, μοιχεία, φαρμακεία, προαγωγεία, δουλαπατία, δολοφονία, ψευδομαρτυρία, τὰ δὲ βίαια, οἷον αἰκία, δεσμός, θάνατος, ἁρπαγή, πήρωσις, κακηγορία, προπηλακισμός. c. 6, 1131, b, 27: τὸ μὲν γὰρ διανεμητικὸν δίκαιον τῶν κοινῶν ἀεὶ κατὰ τὴν ἀναλογίαν ἐστὶ τὴν εἰρημένην· καὶ γὰρ ἀπὸ χρημάτων κοινῶν ἐὰν γίγνηται ἡ διανομή, ἔσται κατὰ τὸν λόγον τὸν αὐτὸν ὅνπερ ἔχουσι πρὸς ἄλληλα τὰ εἰσενεχθέντα· καὶ τὸ ἄδικον τὸ ἀντικείμενον τῷ δικαίῳ τούτῳ παρὰ τὸ ἀνάλογόν ἐστιν. τὸ δ' ἐν τοῖς συναλλάγμασι δίκαιον ἐστὶ μὲν ἴσον τι, καὶ τὸ ἄδικον ἄνισον, ἀλλ' οὐ κατὰ τὴν ἀναλογίαν ἐκείνην ἀλλὰ κατὰ τὴν ἀριθμητικήν. οὐθὲν γὰρ διαφέρει, εἰ ἐπιεικὴς φαῦλον ἀπεστέρησεν ἢ φαῦλος ἐπιεικῆ . . . ἀλλὰ πρὸς τοῦ βλάβους τὴν διαφορὰν μόνον βλέπει ὁ νόμος &c. PLATO (*Gorg.* 508, A) had opposed ἰσότης γεωμετρικὴ to πλεονεξία.

[2] After discussing, in the above passage, both distributive and corrective justice, Aristotle comes (c. 8) to the view that justice consists in retribution, τὸ ἀντιπεπονθὸς (on which see *Ph. d. Gr.* i. 360, 2). This he rejects as a valid definition of justice in general, since it is applicable neither to distributive nor even, strictly speaking, to punitive justice. Only κοινωνίαι ἀλλακτικαὶ rest upon τὸ ἀντιπεπονθὸς, which, however, is here, not κατ' ἰσότητα, but κατ' ἀναλογίαν: τῷ ἀντιποιεῖν γὰρ ἀνάλογον συμμένει ἡ πόλις (1132, b, 31 sqq.): it is not the same, but different, though equivalent things are exchanged for one another, the norm for each exchange being con-

demand, which is the source of all exchange; and the symbol which represents demand is money.[1] Now

tained in the formula: as are the goods of the one to those of the other, so must that which the former obtains be to that which the latter obtains. Cf. ix. 1 *init.* It is thus obvious that the previous assertion, that corrective justice proceeds according to arithmetical proportion, is inapplicable to this whole class of transactions. But it does not even apply to penal justice. Even here the proportion is geometrical: as A's act is to B's, so is the treatment which A receives to that which B receives. Only indemnification for injury is determined according to arithmetical proportion, and even here it is merely an analogy, as it is only an equivalent that is granted (it is an obvious defect in Aristotle's theory that it makes no distinction between indemnification and punishment, and here treats punishment, which certainly has other aims as well, merely as a loss inflicted upon the transgressor for the purpose of rectifying his unjust gain). When, however, TRENDELENBURG (*ibid.* 405 sqq.) distinguishes the justice in payment and repayment, upon the basis of which contracts are concluded, from corrective justice, and assigns it to distributive, so that the latter embraces the mutual justice of exchange as well as the distributive justice of the state, while corrective justice is confined to the action of the judge, either in inflicting penalties or in deciding cases of disputed ownership, he cannot find much support for this view. From the passages quoted in the preceding note, it is obvious that by distributive justice, Aristotle means that which has to do with the distribution of κοινὰ, whether these are honour or other advantages; by corrective justice, on the other hand, so far as it relates to ἑκούσια συναλλάγματα, in the first instance, fair dealing in commercial life, and not the legal justice of litigation, as the expression ἑκούσια συναλλάγματα indicates, since it is a name given to them (c. 5) because they rest upon voluntary contract. Even in these there are redress and correction: the loss which, *e.g.*, the seller suffers on the deliverance of his goods is compensated by the payment for the same, so that neither party loses or gains (c. 7, 1332, a, 18), and only when no agreement can be arrived at is the judge called in to undertake the settlement. They belong, therefore, not to διανεμητικὸν, but to διορθωτικὸν δίκαιον. On some other defects in Aristotle's theory of justice, among which the chief is his failure clearly to grasp the general conception of right, and to deduce a scientific scheme of natural rights, see HILDENBRAND, *ibid.* p. 293 sqq.

[1] *Ibid.* 1133, a, 19: πάντα συμβλητὰ δεῖ πως εἶναι, ὧν ἐστὶν ἀλλαγή· ἐφ' ὃ τὸ νόμισμ' ἐλήλυθε καὶ γίνεταί πως μέσον· πάντα γὰρ μετρεῖ . . . δεῖ ἄρα ἑνί τινι πάντα μετρεῖσθαι, ὥσπερ ἐλέχθη πρότερον. τοῦτο δ' ἐστὶ τῇ μὲν ἀληθείᾳ ἡ χρεία, ἣ πάντα συνέχει . . . οἷον δ'

justice consists in right dealing with reference to these relations: injustice in the opposite. Justice requires that a man should not assign to himself greater profit or less loss, to the other party greater loss or less profit, than rightfully belongs to each: injustice consists in doing so.[1] A just or an unjust man, again, may be defined as one whose will identifies itself with one or the other mode of action. These two, injustice in the act and in the agent, do not absolutely coincide. A man may do injustice without acting unjustly,[2] and one may act unjustly without therefore being unjust;[3] and accordingly Aristotle makes a distinction between hurt, wrong, and injustice.[4]

ὑπάλλαγμα τῆς χρείας τὸ νόμισμα γέγονε κατὰ συνθήκην, whence the name νόμισμα, from νόμος. Cf. b, 10 sqq. ix. 1,1164, a, 1. See the further treatment of money, *Polit.* i. 9, 1257, a, 31 sqq.

[1] See p. 170, n. 4, *supra*, and *ibid.* c. 9, 1134, a, 6. As justice thus consists in respect for the rights of others, it is called an ἀλλότριον ἀγαθόν, c. 3, 1130, a, 3, c. 10, 1134, b, 2.

[2] *Eth.* v. 10, 1135, a, 15: ὄντων δὲ τῶν δικαίων καὶ ἀδίκων τῶν εἰρημένων, ἀδικεῖ μὲν καὶ δικαιοπραγεῖ, ὅταν ἑκών τις αὐτὰ πράττῃ· ὅταν δ' ἄκων, οὔτ' ἀδικεῖ οὔτε δικαιοπραγεῖ ἀλλ' ἢ κατὰ συμβεβηκός . . . ἀδίκημα δὲ καὶ δικαιοπράγημα ὥρισται τῷ ἑκουσίῳ καὶ ἀκουσίῳ ὥστ' ἔσται τι ἄδικον μὲν ἀδίκημα δ' οὔπω ἐὰν μὴ τὸ ἑκούσιον προσῇ.

[3] C. 9 (see p. 170, n. 4, *supra*), the δίκαιος had been defined as πρακτικὸς κατὰ προαίρεσιν τοῦ δικαίου: c. 10 *init.* the question is asked: ἐπεὶ δ' ἔστιν ἀδικοῦντα μήπω ἄδικον εἶναι, ὁ ποῖα ἀδικήματα ἀδικῶν ἤδη ἄδικός ἐστιν ἑκάστην ἀδικίαν, οἷον κλέπτης ἢ μοιχὸς ἢ λῃστής; the reply is, that if one, *e.g.*, commits adultery from passion, not διὰ προαιρέσεως ἀρχήν, we must say: ἀδικεῖ μὲν οὖν, ἄδικος δ' οὐκ ἔστιν, οἷον οὐδὲ κλέπτης, ἔκλεψε δέ, οὐδὲ μοιχός, ἐμοίχευσε δέ. Cf. following note, and p. 116, n. 3.

[4] *Ibid.* 1135, b, 11, all actions are divided into voluntary and involuntary, and the former again into intentional and unintentional (see p. 116 sqq. *supra*): τριῶν δὴ οὐσῶν βλαβῶν τῶν ἐν ταῖς κοινωνίαις [in a passage which Aristotle has here, perhaps, in view, *Laws*, ix. 861, E, PLATO had distinguished βλάβη from ἀδίκημα, cf. *Ph. d. Gr.* i. 719, 3 *fin.*] τὰ μὲν μετ' ἀγνοίας ἁμαρτήματά ἐστιν [or more accurately, l. 16, either ἀτυχήματα or ἁμαρτήματα, ἁμαρτάνει μὲν γὰρ ὅταν ἡ ἀρχὴ ἐν αὐτῷ ᾖ τῆς αἰτίας,

In discussing the nature of justice we must further take account of the difference between complete and incomplete natural and legal right. Rights in the fullest sense exist only between those who are free and equal;[1] hence the distinction between political and paternal, domestic or proprietary right.[2] Political right, again, is divided into natural and legal right; the former of which is binding upon all men in like manner, while the latter rests on arbitrary statute, or refers to particular cases and relations;[3] for however dissimilar

ἀτυχεῖ δ' ὅταν ἔξωθεν] . . . ὅταν δὲ εἰδὼς μὲν, μὴ προβουλεύσας δὲ, ἀδίκημα [wrong done in passion: e.g. anger] . . . ὅταν δ' ἐκ προαιρέσεως, ἄδικος καὶ μοχθηρός . . . ὁμοίως δὲ καὶ δίκαιος, ὅταν προελόμενος δικαιοπραγῇ· δικαιοπραγεῖ δὲ, ἂν μόνον ἑκὼν πράττῃ. But even involuntariness can only excuse ὅσα μὴ μόνον ἀγνοοῦντες ἀλλὰ καὶ δι' ἄγνοιαν ἁμαρτάνουσι, not wrong committed in thoughtlessness which is caused by culpable passion.

[1] C. 10, 1134, a, 25: τὸ ζητούμενόν ἐστι καὶ τὸ ἁπλῶς δίκαιον καὶ τὸ πολιτικὸν δίκαιον. τοῦτο δέ ἐστιν ἐπὶ κοινωνῶν βίου πρὸς τὸ εἶναι αὐτάρκειαν, ἐλευθέρων καὶ ἴσων ἢ κατ' ἀναλογίαν ἢ κατ' ἀριθμόν. Where these conditions are absent, we have not τὸ πολιτικὸν δίκαιον, ἀλλά τι δίκαιον [a particular kind of justice, as distinguished from τὸ ἁπλῶς δίκαιον] καὶ καθ' ὁμοιότητα. The former (b, 13) is always κατὰ νόμον καὶ ἐν οἷς ἐπεφύκει εἶναι νόμος· οὗτοι δ' ἦσαν ἐν οἷς ὑπάρχει ἰσότης τοῦ ἄρχειν καὶ ἄρχεσθαι.

[2] *Ibid.* 1134, b, 8: τὸ δὲ δεσποτικὸν δίκαιον καὶ τὸ πατρικὸν οὐ ταὐτὸν τούτοις ἀλλ' ὅμοιον· οὐ γάρ ἐστιν ἀδικία πρὸς τὰ αὑτοῦ ἁπλῶς· τὸ δὲ κτῆμα καὶ τὸ τέκνον, ἕως ἂν ᾖ πηλίκον καὶ μὴ χωρισθῇ, ὥσπερ μέρος αὑτοῦ . . . διὸ μᾶλλον πρὸς γυναῖκά ἐστι δίκαιον ἢ πρὸς τέκνα καὶ κτήματα· τοῦτο γάρ ἐστι τὸ οἰκονομικὸν δίκαιον· ἕτερον δὲ καὶ τοῦτο τοῦ πολιτικοῦ.

[3] *Ibid.* 1134, b, 18: τοῦ δὲ πολιτικοῦ δικαίου τὸ μὲν φυσικόν ἐστι τὸ δὲ νομικὸν, φυσικὸν μὲν τὸ πανταχοῦ τὴν αὐτὴν ἔχον δύναμιν, καὶ οὐ τῷ δοκεῖν ἢ μὴ, νομικὸν δὲ ὃ ἐξ ἀρχῆς μὲν οὐθὲν διαφέρει οὕτως ἢ ἄλλως, ὅταν δὲ θῶνται διαφέρει . . . ἔτι ὅσα ἐπὶ τῶν καθέκαστα νομοθετοῦσιν. Cf. c. 12, 1136, b, 33. Natural right is universal unwritten law [νόμος κοινὸς ἄγραφος]; positive right [νόμος ἴδιος], on the other hand, is described as written law (*Rhet.* i. 10, 1368, b, 7; cf. c. 14, 1375, a, 16, c. 15, 1375, a, 27, 1376, b, 23; *Eth.* viii. 15, 1162, b, 21): but even here there is a distinction between the written and the unwritten (or that part which belongs to custom and habit), *Rhet.* i. 13, 1373, b, 4; cf. *Eth.* x. 10, 1180, a, 35.

and changeable human laws and institutions may be, we cannot deny that there is a natural right, nor is the existence of a natural standard disproved by the possibility of divergence from it.[1] Indeed, such natural right is the only means of supplementing the defects which, seeing that it is a mere general rule and cannot by its very nature take account of exceptions, attach even to the best law.[2] When such an exception occurs it is necessary to sacrifice legal in order to save natural right. This rectification of positive by natural right constitutes Equity.[3] Several other questions, which Aristotle takes occasion to discuss in the course of his researches into the nature of justice,[4] we may here pass

[1] *Eth.* v. 10, 1134, b, 24 sqq.; cf. *Rhet.* i. 13, 1373, b, 6 sqq., where Aristotle appeals for the φύσει κοινὸν δίκαιον to well-known verses in Sophocles and Empedocles, and to the universal agreement of men.

[2] Similarly PLATO, *Ph. d. Gr.* i. 763, 1.

[3] *Eth.* v. 14, especially 1137, b. 11: τὸ ἐπιεικὲς δίκαιον μέν ἐστιν, οὐ τὸ κατὰ νόμον δὲ, ἀλλ' ἐπανόρθωμα νομίμου δικαίου. And after proving the above, l. 24: διὸ δίκαιον μέν ἐστι καὶ βέλτιον τοῦ τινὸς δικαίου [on which see p. 175, n. 1, *supra*], οὐ τοῦ ἁπλῶς δὲ [which here as *Polit.* iii. 6, 1279, a, 18, and *Eth.* v. 10, 1134, a, 25 = φυσικὸν δίκαιον] ἀλλὰ τοῦ διὰ τὸ ἁπλῶς [for which παρὰ τὸ ἁπλ. might be conjectured: the words, however, may be explained by supplying after διὰ τὸ ἁπλῶς, not δίκαιον, but ὁρίσασθαι, or a similar word] ἁμαρτήματος. καὶ ἔστιν αὕτη ἡ φύσις ἡ τοῦ ἐπιεικοῦς, ἐπανόρθωμα νόμου ῃ ἐλλείπει διὰ τὸ καθόλου. The ἐπιεικὴς is therefore (l. 35) ὁ τῶν τοιούτων προαιρετικὸς καὶ πρακτικὸς, καὶ ὁ μὴ ἀκριβοδίκαιος &c., and ἐπιείκεια is δικαιοσύνη τις καὶ οὐχ ἑτέρα τις ἕξις.

[4] Whether it is possible voluntarily to suffer injury and to do oneself an injury, and whether in an unequal distribution the distributor or the receiver commits the wrong. Aristotle deals with these questions, *Eth.* v. c. 11, 12 and 15. He is prevented from finding any satisfactory solution of them, partly by the limitation of injustice to πλεονεξία, partly by the failure which is connected with it clearly to distinguish between alienable rights, of which it is true *volenti non fit injuria*, and inalienable, and similarly between civil and penal wrongs. Doubts have been entertained as to the genuineness of one part of these discussions. Chap. 15 is connected with the discussion of justice in

over, especially as he arrives at no definite conclusions with regard to them.

The discussion of the principal virtues serves to confirm the truth of the general definition of virtue previously given. In all of them the question is one of the preservation of the proper mean between two extremes of error. But how are we to discover the proper mean? Neither in the previous general discussion nor in his account of the individual virtues has Aristotle provided us with any reliable criterion of judgment upon this head. In the former, he refers us to insight as the guide to the discovery of the right;[1] in the latter, it is the opposition between two vicious and one-sided extremes that reveals the proper mean. But when we ask what kind of conduct is vicious there

a manner which is certainly not Aristotle's. SPENGEL (*Abh. d. Bair. Akad.* philos.-philol. Kl. iii. 470) proposes therefore to transpose c. 10 and c. 14, but this does not get over the difficulty, as c. 13 would still disturb the connection between c. 12 and 15. FISCHER (*De Eth. Nicom. &c.* p. 13 sqq.) and FRITZSCHE (*Ethica Eudemi*, 117, 120 sqq.) regard c. 15 as a fragment from the fourth book of the *Eudemian Ethics*. BRANDIS, p. 1438 sq., leaves the choice open between these and other possible explanations (*e.g.* that it is a preliminary note to a larger discussion). The difficulties seem to disappear if we place c. 15, with the exception of the last sentence, between c. 12 and 13. It is not true that the question which it discusses has already been settled: in c. 11 it was asked whether what one suffers voluntarily, here whether what one inflicts on oneself, is a wrong. This investigation is expressly said to be still in prospect at the beginning of c. 12, and while it is certainly not more, it is also not less satisfactory than the kindred investigations, c. 11 and 12. TRENDELENBURG declares himself, *ibid.* 423, satisfied with this transposition, in support of which he appeals to *M. Mor.* i. 34, 1196, a, 28, compared with *Eth. N.* v. 15, 1138, b, 8. On the other hand, RAMSAUER has not a word in allusion to the difficulty of the position of c. 15. In the text of c. 15 itself, however, the order is certainly defective; cf. RAMSAUER, *in loco*, RASSOW, *Forsch. über die nikom. Eth.* 42, 77, 96

[1] See p. 163, n. 2, *supra*.

is none to enlighten us but 'the man of insight,' no ultimate criterion but the notion which he may have formed of the proper mean. All moral judgment, and with it all moral insight, is thus conditioned by 'Insight.' If, then, we would understand the true nature of moral virtue we must next face the question of the nature of Insight, and accordingly Aristotle devotes the sixth book of the *Ethics* to its discussion, illustrating it by comparison with kindred qualities, and explaining its practical import.[1] To this end he first distinguishes,

[1] It is usual to assign a more independent position to the section upon the dianoëtic virtues. The *Ethics* is thought to be a general account of all the virtues which are partly moral and partly intellectual; the former are treated of B. ii.–v., the latter B. vi. But while Eudemus (according to *Eth. Eud.* ii. 1, 1220, a, 4-15) may have treated his subject in this way, Aristotle's intention seems to have been different. Ethics, according to Aristotle, is merely a part of Politics (see p. 135 sq.) from which Eudemus (i. 8, 1218, b, 13) is careful to distinguish it as a separate science. Its aim is not (see p. 181, n. 3, *supra*) γνῶσις, but πρᾶξις (*Eth. Eud.* i. 1, 1214, a, 10, represents it as 'not only knowledge, but also action'), and accordingly it requires experience and character to understand it (*Eth. N.* i. 1095, a, 2 sqq., see p. 161, n. 2, 3, *supra*). It would be inconsistent with this practical aim (an objection which, according to *M. Mor.* i. 35, 1197, b, 27, was already urged by the older Peripatetics, and which is there inadequately met), if the *Ethics* were to deal with intellectual activity for its own sake, and without relation to human action in the sense in which vi. 7, 1141, a, 28 declares that Politics has nothing to do with it. The treatment, moreover, in the sixth book, as it stands, if it professes to give a complete account of dianoëtic virtue, is very unsatisfactory. The highest modes of intellectual activity are precisely those which are disposed of most briefly. This, on the other hand, becomes perfectly intelligible if we suppose the true aim to be the investigation of φρόνησις, the other dianoëtic virtues being only mentioned here in order to mark off the province of φρόνησις from theirs and clearly to exhibit its peculiarities by the antithesis. Aristotle has to speak of φρόνησις, because, as he himself says, c. 1 (p. 163, 2, *supra*), he has defined moral virtue as conduct according to ὀρθὸς λόγος, or as the φρόνιμος would define it, and because the discussion forms a necessary part of a complete account of moral virtue. Cf. on

as we have already seen, a two-fold activity of reason, the theoretic and the practical: that which deals with necessary truth, and that which deals with what is matter of choice.[1] Inquiring further how reason, knowledge, wisdom, insight and art[2] are related to one another, he answers that knowledge deals with necessary truth, which is perceived by an indirect process of

this head also vi. 13 (p. 166, n. 1, *supra*), x. 8, 1178, a, 16: συνέζευκται δὲ καὶ ἡ φρόνησις τῇ τοῦ ἤθους ἀρετῇ, καὶ αὕτη τῇ φρονήσει, εἴπερ αἱ μὲν τῆς φρονήσεως ἀρχαὶ κατὰ τὰς ἠθικάς εἰσιν ἀρετὰς, τὸ δ' ὀρθὸν τῶν ἠθικῶν κατὰ τὴν φρόνησιν.

[1] See p. 113, n. 1, *supra*.

[2] *Eth.* vi. 3 *init.*: ἔστω δὴ οἷς ἀληθεύει ἡ ψυχὴ τῷ καταφάναι ἢ ἀποφάναι πέντε τὸν ἀριθμόν· ταῦτα δ' ἐστὶ τέχνη, ἐπιστήμη, φρόνησις [which we have to translate by 'insight' for lack of a better word], σοφία, νοῦς, ὑπολήψει γὰρ καὶ δόξῃ ἐνδέχεται διαψεύδεσθαι. Whether Aristotle intends to treat all five or only some of those virtues is, on our view of the aim of this discussion, not very important. At the same time we cannot agree with PRANTL (*Ueber die dianoët. Tug. d. nikom. Eth.* Münch. 1852) in regarding σοφία and φρόνησις as the only dianoëtic virtues: the former, that of the λόγον ἔχον, so far as it has for its object τὸ μὴ ἐνδεχόμενον ἄλλως ἔχειν; the latter with the qualities which are subordinate to it (εὐβουλία, σύνεσις, γνώμη, δεινότης), in so far as it refers to τὸ ἐνδεχόμενον ἄλλως ἔχειν; of νοῦς, on the other hand, he says that as immediate it cannot be regarded as a virtue, of ἐπιστήμη and τέχνη that they are not virtues, but that there is an ἀρετὴ ἐπιστήμης, σοφία, and an ἀρετὴ τέχνης, likewise in the last instance σοφία. Aristotle certainly speaks of σοφία, c. 7, 1141, a, 12, as ἀρετὴ τέχνης, but only in the popular sense; as σοφία has to do only with the necessary, it cannot in this sense be ἀρετὴ τέχνης, whose sphere is τὸ ἐνδεχόμενον ἄλλως ἔχειν. But, apart from this inaccuracy, Prantl's view is untenable, for in the first place Aristotle expressly says, c. 2 *init.*, that the dianoëtic virtues are the subject of the discussion that follows, and nowhere hints that there is any difference in this respect among the five which he enumerates c. 3, and in the second place Aristotle's definition of virtue applies to all five. If every praiseworthy quality is a virtue (*Eth.* i. 13 *fin.*: τῶν δὲ ἕξεων τὰς ἐπαινετὰς ἀρετὰς λέγομεν) ἐπιστήμη and τέχνη are undoubtedly ἕξεις ἐπαινεταί (as example of ἕξις, ἐπιστήμη is the one which is given in *Categ.* c. 8, 8, a, 29, 11, a, 24); if, on the other hand, we accept the definition of virtue elsewhere (*Top.* v. 3, 131, b, 1), ὃ τὸν ἔχοντα ποιεῖ σπουδαῖον, this also is applicable to both. The same is true of νοῦς when conceived of, not as a special part of the soul, but as a special quality of that part, as it must be when classed along with ἐπιστήμη,

thought—in other words, by inference;[1] that necessary truth is also the object of reason (νοῦς) in that narrower sense in which it means the power of grasping in an act of immediate cognition those highest and most universal truths which are the presuppositions of all knowledge;[2]

&c.; c. 12 *init.*, moreover, it is expressly described as a ἕξις, but if it is a ἕξις it must be a ἕξις ἐπαινετή: in other words, an ἀρετή.

[1] *Ibid.* c. 3; cf. p. 243, *supra.*

[2] *Ibid.* c. 6, and frequently, *v.* p. 244, sqq. From reason in this sense νοῦς πρακτικὸς is distinguished. The difference, according to *De An.* iii. 10, *Eth.* vi. 2, 12 (p. 113, n. 2, cf. 118, n. 1, *supra*), is that the object of the practical reason is action, and therefore τὸ ἐνδεχ. ἄλλως ἔχειν, whereas the theoretic reason is concerned with all ὅσων αἱ ἀρχαὶ μὴ ἐνδέχονται ἄλλως ἔχειν. In his further treatment of the practical reason Aristotle is hardly consistent. In the passages cited, p. 113, n. 2, its function is described as βουλεύεσθαι or λογίζεσθαι, while it is itself called τὸ λογιστικόν; it is of less import (according to p. 106, n. 2, *supra*) that for νοῦς πρακτικὸς stand also διάνοια πρακτική, πρακτικὸν καὶ διανοητικόν. On the other hand we read, *Eth.* vi. 12, 1143, a, 35: καὶ ὁ νοῦς τῶν ἐσχάτων ἐπ' ἀμφότερα· καὶ γὰρ τῶν πρώτων ὅρων καὶ τῶν ἐσχάτων νοῦς ἐστι καὶ οὐ λόγος, καὶ ὁ μὲν κατὰ τὰς ἀποδείξεις τῶν ἀκινήτων ὅρων καὶ πρώτων, ὁ δ' ἐν ταῖς πρακτικαῖς [sc. ἐπιστήμαις, not ἀποδείξεσι, as the species πρακτικαὶ ἀποδείξεις cannot stand as the antithesis to the genus ἀπόδειξις; moreover, the former phrase involves a self-contradiction, ἀπόδειξις according to p. 243 sq. being a conclusion from necessary premises, whereas deliberation has to do with τὸ ἐνδεχ. ἄλλως ἔχειν) τοῦ ἐσχάτου καὶ ἐνδεχομένου καὶ τῆς ἑτέρας προτάσεως. ἀρχαὶ γὰρ τοῦ οὗ ἕνεκα αὗται· ἐκ γὰρ τῶν καθ' ἕκαστα τὸ καθόλου [the last clause, ἐκ γὰρ, &c., has hitherto baffled the commentators, and ought perhaps to be struck out]. τούτων οὖν ἔχειν δεῖ αἴσθησιν, αὕτη δ' ἐστὶ νοῦς. According to this passage also there is, besides the reason which knows the unchangeable principles of demonstrations, a second whose object is τὸ ἔσχατον, τὸ ἐνδεχόμενον, ἡ ἑτέρα πρότασις, and which, therefore, is described as an αἴσθησις of these (τούτων can only refer to these ἀρχαὶ τοῦ οὗ ἕνεκα). By ἔσχατον can only be meant the same as iii. 5, 1112, b, 23 (cf. vi. 9, 1142, a, 24 and p. 118, n. 3, *supra*) where it is said, τὸ ἔσχατον ἐν τῇ ἀναλύσει πρῶτον εἶναι ἐν τῇ γενέσει, the primary condition (πρῶτον αἴτιον, 1112, b, 19) for the attainment of a certain end, with the discovery of which deliberation ceases and action begins, as set forth, iii. 5, 1112, b, 11 sqq.; *De An.* iii. 10 (see p. 113, n. 2, *supra*). As it lies in our own power to make this condition actual or not, it is described as ἐνδεχόμενον. But it does not coincide in mean-

that wisdom consists in the union of reason and know-

ing, as WALTER, *Lehre v. d. prakt. Vern.* 222, assumes, with the ἑτέρα πρότασις, 'the second premise.' The latter is the minor premise of the practical syllogism: in the example adduced, *Eth.* vi. 5 (see p. 110, n. 1, *supra*), 'παντὸς γλυκέος γεύεσθαι δεῖ, τουτὶ δὲ γλυκύ,' &c., it is the clause 'this is sweet'; the ἔσχατον, on the other hand, which leads immediately to action is the conclusion (in the given case: τούτου γεύεσθαι δεῖ), which is called, *De An.* iii. 10 (see p. 113, n. 2, *supra*), *Eth.* vi. 8, 1141, b, 12, ἀρχὴ τῆς πράξεως, πρακτὸν ἀγαθόν; as, then, τὸ πρακτὸν is described as τὸ ἔσχατον, vi. 8, 1141, b, 27, c. 8, 1142, a, 24 also, and only this can be meant by τὸ ἐνδεχ. in the passage before us, the minor premise ('this is sweet,' 'this is shameful') does not refer to a mere possibility but to an unalterable reality. It is certainly surprising to be told that both of these are not known by a λόγος, but by Nous, seeing that the minor premise of the practical syllogism is matter of perception, not of Nous, while the conclusion, τὸ ἔσχατον, being deduced from the premises, is matter, not of νοῦς, but of λόγος, not of immediate but of mediate knowledge. Nevertheless, although in many cases (as in the above, τουτὶ γλυκὺ) the minor premise of the practical syllogism is a real perception, there are other cases in which it transcends mere perception: as, for instance, when the major premise is 'we must do what is just,' the minor 'this action is just.' In such cases we can only speak of αἴσθησις in the improper sense described p, 250, n. 1, *supra* (for another example, *v. Eth.* ii. 9, 1109, b, 20), and Aristotle himself remarks (*v.* p. 183, n. 4, *infra*) that what he here calls αἴσθησις it would be better to call φρόνησις. But even the ἔσχατον, i.e. the πρακτὸν, must be object of αἴσθησις, as it is a particular, and all particulars are so (cf. p. 183, *infra*). What is more remarkable is that the passage before us places the function of the practical reason, not in βουλεύεσθαι (on which *v.* p. 182, n, 5, *infra*), but in the cognition of the ἑτέρα πρότασις and the ἔσχατον. It is wholly inadmissible to say, with WALTER, *ibid.* 76 sqq., that it is speaking of the theoretic reason and not of the practical at all. It is impossible to understand the words ὁ μὲν κατὰ τὰς ἀποδείξεις, &c., to mean that one and the same Nous knows both. If we examine c. 2 of this book (see p. 113, n. 2, *supra*) where, consistently with other passages, τὰ ἐνδεχ. ἄλλως ἔχειν are expressly assigned to the νοῦς πρακτικὸς as the sphere of its action, while the θεωρητικὸς is confined to the sphere of necessary truth, and if we consider how important a place the latter doctrine has in Aristotle's philosophy (cf. p. 197, n. 4, *supra*; *Anal. Post.* i. 33 *init.*: of the ἐνδεχ. ἄλλως ἔχειν there is neither an ἐπιστήμη nor a νοῦς), we must regard it as more than improbable that what in all other passages is in the distinctest terms denied of this reason is here expressly affirmed of it. Such an explanation is unnecessary: Aristotle says of φρόνησις,

ledge in the cognition of the highest and worthiest objects.[1] These three, therefore, constitute the purely theoretic side of reason. They are the processes by which we know the actual and its laws. What they deal with cannot be otherwise than as it is, and therefore cannot be matter of human effort. On the other hand, art and insight[2] deal with human action: in the one case as it concerns production, in the other as it is conduct.[3] Insight alone, therefore, of all the cognitive activities can be our guide in matters of conduct. It is not, however, the only element in the determination of conduct. The ultimate aims of action are determined, according to Aristotle,[4] not by deliberation, but by the character of the will:[5] or, as he would

the virtue of the practical reason, both that practical deliberation, and that the immediate knowledge of the ἔσχατον and πρακτὸν, is the sphere of its operation (see p. 182, n. 3, *infra*). He attributes, therefore, to it the knowledge both of the actual, which is the starting-point of deliberation, and of the purpose which is its goal.

[1] C. 7, 1141, a, 16 (after rejecting the common and inaccurate use of the word σοφία): ὥστε δῆλον ὅτι ἡ ἀκριβεστάτη ἂν τῶν ἐπιστημῶν εἴη ἡ σοφία. δεῖ ἄρα τὸν σοφὸν μὴ μόνον τὰ ἐκ τῶν ἀρχῶν εἰδέναι, ἀλλὰ καὶ περὶ τὰς ἀρχὰς ἀληθεύειν. ὥστ' εἴη ἂν ἡ σοφία νοῦς καὶ ἐπιστήμη, ὥσπερ κεφαλὴν ἔχουσα ἐπιστήμη τῶν τιμιωτάτων. Cf. p. 290, n. 2, *supra*.

[2] It would be preposterous, Aristotle continues, c. 7, 1141, a, 20, to regard φρόνησις and πολιτικὴ as the highest knowledge; in that case we should have to regard man as the noblest of all beings. The former is concerned with what is best for man: on the other hand ἡ σοφία ἐστὶ καὶ ἐπιστήμη καὶ νοῦς τῶν τιμιωτάτων τῇ φύσει. c. 8 *init.*: ἡ δὲ φρόνησις περὶ τὰ ἀνθρώπινα καὶ περὶ ὧν ἔστι βουλεύσασθαι· τοῦ γὰρ φρονίμου μάλιστα τοῦτ' ἔργον εἶναί φαμεν, τὸ εὖ βουλεύεσθαι, βουλεύεται δ' οὐθεὶς περὶ τῶν ἀδυνάτων ἄλλως ἔχειν, οὐδ' ὅσων μὴ τέλος τί ἐστι καὶ τοῦτο πρακτὸν ἀγαθόν. See also p. 183, n. 2, *supra*.

[3] See p. 107, n. 2, *supra*.

[4] As was rightly pointed out by WALTER, *Lehre v. d. prakt. Vern.* 44, 78, and HARTENSTEIN in opposition to TRENDELENBURG (*Hist. Beitr.* ii. 378), and the earlier view of the present treatise.

[5] *Eth.* iii. 5, 1112, b, 11: βουλευόμεθα δὲ οὐ περὶ τῶν τελῶν ἀλλὰ περὶ τῶν πρὸς τὰ τέλη. So the physician, the orator, the

explain it, while all aim at happiness,[1] it depends upon the moral character of each individual wherein he seeks it. Practical deliberation is the only sphere of the exercise of insight;[2] and since this has to do, not with universal propositions, but with their application to given cases, knowledge of the particular is more indispensable to it than knowledge of the universal.[3] It is this application to practical aims and to particular given cases that distinguishes insight both from science and from theoretic reason.[4] On the other hand, it is

legislator: θέμενοι τέλος τι πῶς καὶ διὰ τίνων ἔσται σκοποῦσι. vi. 13, 1144, a, 8: τὸ ἔργον ἀποτελεῖται κατὰ τὴν φρόνησιν καὶ τὴν ἠθικὴν ἀρετήν· ἡ μὲν γὰρ ἀρετὴ τὸν σκοπὸν ποιεῖ ὀρθὸν, ἡ δὲ φρόνησις τὰ πρὸς τοῦτον. L. 20: τὴν μὲν οὖν προαίρεσιν ὀρθὴν ποιεῖ ἡ ἀρετὴ, τὸ δ' ὅσα ἐκείνης ἕνεκα πέφυκε πράττεσθαι οὐκ ἔστι τῆς ἀρετῆς ἀλλ' ἑτέρας δυνάμεως. See further, p. 186, n. 5, *infra*.

[1] See p. 139, n. 1, *supra*.

[2] C. 8 *init.*; see p. 118, n. 3, *supra*.

[3] *Eth.* vi. 8, 1141, b, 14 (with reference to the words quoted n. 2 preced. p.): οὐδ' ἐστὶν ἡ φρόνησις τῶν καθόλου μόνον, ἀλλὰ δεῖ καὶ τὰ καθέκαστα γνωρίζειν· πρακτικὴ γάρ, ἡ δὲ πρᾶξις περὶ τὰ καθέκαστα. And accordingly (as is remarked also *Metaph.* i. 881, a, 12 sqq.) experience without knowledge (*i.e.* without apprehension of the universal) is as a rule of greater practical use than knowledge without experience. ἡ δὲ φρόνησις πρακτική· ὥστε δεῖ ἄμφω ἔχειν ἢ ταύτην [the apprehension of the particular] μᾶλλον. For the same reason young people lack φρόνησις (c. 9, 1142, a, 11), being without experience.

[4] *Eth.* vi. 9, 1142, a, 23: ὅτι δ' ἡ φρόνησις οὐκ ἐπιστήμη, φανερόν· τοῦ γὰρ ἐσχάτου ἐστὶν, ὥσπερ εἴρηται· [in the passage quoted, p. 182, n. 2, *sup.*, where it was shown to be concerned with the πρακτὸν ἀγαθόν; cf. c. 8, 1141, b, 27: τὸ γὰρ ψήφισμα πρακτὸν ὡς ἔσχατον] τὸ γὰρ πρακτὸν τοιοῦτον [sc. ἔσχατον]. ἀντίκειται μὲν δὴ τῷ νῷ· ὁ μὲν γὰρ νοῦς τῶν ὅρων, ὧν οὐκ ἔστι λόγος, ἡ δὲ τοῦ ἐσχάτου, οὗ οὐκ ἔστιν ἐπιστήμη, ἀλλ' αἴσθησις, οὐχ ἡ τῶν ἰδίων, ἀλλ' οἵᾳ αἰσθανόμεθα ὅτι τὸ ἐν τοῖς μαθηματικοῖς ἔσχατον τρίγωνον· στήσεται γὰρ κἀκεῖ. ἀλλ' αὕτη μᾶλλον αἴσθησις ἢ φρόνησις, ἐκείνης δ' ἄλλο εἶδος. This passage has been discussed in recent times by TRENDELENBURG (*Hist. Beitr.* ii. 380 sq.), TEICHMÜLLER (*Arist. Forsch.* i. 253–262), and more exhaustively by WALTER (*Lehr. v. d. prakt. Vern.* 361–433). The best view of Aristotle's meaning and the grounds on which it rests may be shortly stated as follows: Φρόνησις is here distinguished from ἐπιστήμη by marks

seen in both these respects to be a manifestation of practical reason, the essential characteristics of which it

which are already familiar to us. When it is further opposed to Nous, which is described as concerned with indemonstrable principles, we can obviously understand by Nous in this sense only the theoretic, not that reason which Aristotle calls practical and distinguishes from the former as a different faculty of the soul on no other ground than that it (like φρόνησις, according to the passage before us) has to do with the πρακτὸν, the ἐνδεχόμενον, the ἔσχατον (see p. 180, n. 2, *supra*). Finally, it cannot surprise us that the ἔσχατον, with which insight is concerned, is said to be the object not of ἐπιστήμη but of αἴσθησις. For this ἔσχατον, which is found in the conclusion of the practical syllogism, is that in the fulfilment of which action consists, and is always therefore a definite and particular result; the ἔσχατον is the source of the resolution to undertake this journey, to assist this one who is in need, &c. (cf. p. 180, n. 2). But the particular is not the object of scientific knowledge but of perception; cf. p. 163 sq. While this is so, we have to deal in the conclusion of the practical syllogism (often also, as was shown, p. 180 sq., in its minor premise), not only with the apprehension of an actual fact, but at the same time with its subsumption under a universal concept (as in the conclusion: 'I wish a good teacher —Socrates is a good teacher— Socrates must be my teacher'); accordingly, not with a simple perception but with a perceptive judgment. The αἴσθησις, therefore, which is concerned with the ἔσχατον of practical deliberation is not αἴσθησις τῶν ἰδίων, *i.e.* the apprehension of the sensible qualities of objects which are present to particular senses (as was shown, p. 69 sq. *sup.*, this is always accompanied by particular sensations), but an αἴσθησις of another kind. What that kind is is not expressly said, but merely indicated by an example: it is like that which informs us ὅτι τὸ ἐν τοῖς μαθηματικοῖς ἔσχατον τρίγωνον, that in the analysis of a figure the last term which resists all analysis is a triangle. (For only so can the words be understood, as is almost universally recognised; RAMSAUER'S explanation, which takes the general proposition to mean *primam vel simplicissimam omnium figuram esse triangulum*, is contradicted by the circumstance noted by himself that such a proposition is not known by αἴσθησις.) In other words, this αἴσθησις involves a judgment upon the quality of its object. But such propositions as 'this must be done' differ even from the given instance, 'this is a triangle,' in that they refer to something in the picture and not merely to something present to the senses. They are therefore still further removed from perception in the proper sense than it is. Hence he adds: they are more of the nature of φρόνησις; it is more akin to αἴσθησις. The passage, therefore, gives good sense, and there is no reason to reject the

so perfectly reproduces that we have no difficulty in recognising in it 'the virtue of practical reason'—in other words, practical reason educated to a virtue.[1] Its object is on the one hand the individual and his good, on the other the commonwealth: in the former case it is Insight in the narrower sense, in the latter Politics, which again is further divided into Œconomics, and the sciences of Legislation and Government.[2] In the sure discovery of the proper means to the ends indicated by Insight consists Prudence;[3] in right judgment on the matters with which practical Insight has to deal, Understanding;[4] in so far as a man judges equitably on these

words from ὅτι τὸ ἐν τοῖς μαθ. to the end, in which case we should have to suppose that the actual conclusion of the chapter has been lost.

[1] Aristotle does not, indeed, expressly say so, but he attributes to νοῦς πρακτικὸς (see p. 180, n. 2) precisely those activities in which φρόνησις expresses itself, viz. βουλεύεσθαι and occupation with the ἐνδεχόμενον, the πρακτὸν ἀγαθὸν, the ἔσχατον, and remarks of both that they are concerned with matters of αἴσθησις, not of knowledge (p. 183, n. 4, *supra*). These statements are consistent only on the supposition that they refer to one and the same subject, and that insight is merely the right state of the practical reason. PRANTL's view (*ibid.* p. 15), that it is the virtue of τὸ δοξαστικὸν, is refuted even by the passage which he quotes on its behalf, c. 10, 1142, b, 8 sqq., not to speak of c. 3, 1139, b, 15 sqq.

[2] C. 8 sq. 1141, b, 23–1142, a, 10; cf. p. 136.

[3] Εὐβουλία, *ibid.* c. 10; cf. p. 118, n. 3, *supra*. According to this account of it, εὐβουλία must not be confounded with knowledge into which inquiry and deliberation do not enter as elements, nor with εὐστοχία and ἀγχίνοια, which discover what is right without much deliberation, nor with δόξα, which also is not an inquiry; but it is a definite quality of the understanding (διάνοια, see p. 106, n. 2), viz. ὀρθότης βουλῆς ἡ κατὰ τὸ ὠφέλιμον, καὶ οὗ δεῖ καὶ ὡς καὶ ὅτε. And we must further here distinguish between τὸ ἁπλῶς εὖ βεβουλεῦσθαι and τὸ πρός τι τέλος εὖ βεβουλεῦσθαι. Only the former deserves unconditionally to be called εὐβουλία, which is therefore defined as ὀρθότης ἡ κατὰ τὸ συμφέρον πρός τι τέλος, οὗ ἡ φρόνησις ἀληθὴς ὑπόληψίς ἐστιν.

[4] Σύνεσις, *ibid.* c. 11. Its relation to φρόνησις is described 1143, a, 6: περὶ τὰ αὐτὰ μὲν τῇ φρονήσει ἐστὶν, οὐκ ἔστι δὲ ταὐτὸν

matters towards others, we call him Right-minded.[1] Just, therefore, as all perfection of theoretic reason is included in Wisdom, so all the virtues of the practical reason are traced back to Insight.[2] The natural basis of insight is the intellectual acuteness which enables us to find and apply the proper means to a given end.[3] If this is turned to good ends it becomes a virtue, in the opposite case a vice; so that the root from which spring the insight of the virtuous man and the cunning of the knave is one and the same.[4] The character of our ends, however, depends in the first instance upon our will, and the character of our will upon our virtue; and in that sense insight may be said to be conditioned by virtue.[5]

σύνεσις καὶ φρόνησις· ἡ μὲν γὰρ φρόνησις ἐπιτακτική ἐστιν· τί γὰρ δεῖ πράττειν ἢ μή, τὸ τέλος αὐτῆς ἐστίν· ἡ δὲ σύνεσις κριτικὴ μόνον. It consists ἐν τῷ χρῆσθαι τῇ δόξῃ ἐπὶ τὸ κρίνειν περὶ τούτων περὶ ὧν ἡ φρόνησίς ἐστιν, ἄλλου λέγοντος, καὶ κρίνειν καλῶς.

[1] Γνώμη, καθ' ἣν εὐγνώμονας καὶ ἔχειν φαμὲν γνώμην, is according to c. 11, 1143, a, 19 sqq. ἡ τοῦ ἐπιεικοῦς κρίσις ὀρθή, similarly συγγνώμη = γνώμη κριτικὴ τοῦ ἐπιεικοῦς ὀρθή. All right conduct towards others, however, has to do with equity (c. 12, 1143, a, 31).

[2] Aristotle accordingly concludes the discussion of the dianoëtic virtues with the words: τί μὲν οὖν ἐστὶν ἡ φρόνησις καὶ ἡ σοφία . . , εἴρηται, so that he himself appears to regard these as representative of the two chief classes of the dianoëtic virtues. There is this difference, moreover, between them and most of the others (c. 12, 1143, b, 6 sq. c. 9, 1142, a, 11 sqq.) that while νοῦς, σύνεσις and γνώμη are to a certain extent natural gifts, σοφία and φρόνησις are not.

[3] *Ibid.* c. 13, 1144, a, 23: ἔστι δή τις δύναμις ἣν καλοῦσι δεινότητα. αὕτη δ' ἐστὶ τοιαύτη ὥστε τὰ πρὸς τὸν ὑποτεθέντα σκοπὸν συντείνοντα δύνασθαι ταῦτα πράττειν καὶ τυγχάνειν αὐτῶν.

[4] *Ibid.* l. 26: ἂν μὲν οὖν ὁ σκοπὸς ᾖ καλός, ἐπαινετή ἐστιν, ἂν δὲ φαῦλος, πανουργία. VII. 11, 1152, a, 11: διὰ τὸ τὴν δεινότητα διαφέρειν τῆς φρονήσεως τὸν εἰρημένον τρόπον . . . καὶ κατὰ μὲν τὸν λόγον ἐγγὺς εἶναι, διαφέρειν δὲ κατὰ τὴν προαίρεσιν. See above. Plato had already remarked (*Rep.* vi. 491 E) that the same natural gift which rightly guided produces great virtue, under wrong guidance is the source of great vice.

[5] *Eth.* vi. 13, 1144, a, 8, 20 (see p. 182, n. 5, *sup.*). *Ibid.* l. 28 (after the words quoted n. 3, 4): ἔστι δ' ἡ φρόνησις οὐχ ἡ δεινότης, ἀλλ' οὐκ ἄνευ τῆς δυνάμεως ταύτης. ἡ

But, conversely, virtue may also be said to be conditioned by insight;[1] for just as virtue directs the will to good objects, insight teaches it the proper means to employ in the pursuit of them.[2] Moral virtue, therefore, and insight reciprocally condition one another: the former gives the will a bent in the direction of the good, while the latter tells us what actions are good.[3] The circle in which we seem here to be involved is not really resolved by saying[4] that virtue and insight come into existence and grow up together by a gradual process of habituation; that every single virtuous action presupposes insight, every instance of true practical insight virtue;[5] but that if we are in search of the primal germ from which both of these are evolved, we must look for it in education, by which the insight of the older generation produces the virtue of the younger. This solution might suffice if we were dealing merely with the moral development of individuals,

δ' ἕξις [which here, as p. 153, n. 3, *supra*, indicates a permanent quality] *τῷ ὄμματι τούτῳ γίνεται τῆς ψυχῆς* [insight is compared to the eye also] *οὐκ ἄνευ ἀρετῆς . . . διαστρέφει γὰρ ἡ μοχθηρία καὶ διαψεύδεσθαι ποιεῖ περὶ τὰς πρακτικὰς ἀρχάς. ὥστε φανερὸν ὅτι ἀδύνατον φρόνιμον εἶναι μὴ ὄντα ἀγαθόν.* Cf. c. 5, 1140, b, 17: *τῷ δὲ διεφθαρμένῳ δι' ἡδονὴν καὶ λύπην εὐθὺς οὐ φαίνεται ἡ ἀρχή, οὐδὲ* [sc. *φαίνεται αὐτῷ*] *δεῖν τούτου ἕνεκεν καὶ διὰ τοῦθ' αἱρεῖσθαι πάντα καὶ πράττειν.* VII. 9, 1151, a, 14 sqq.

[1] *Eth.* vi. 13, 1144, b, 1–32. Cf. preceding note and p. 156, n. 3, *supra*.

[2] See p. 182, n. 5, *supra*. *Eth.* vi. 13, 1145. a, 4: *οὐκ ἔσται ἡ προαίρεσις ὀρθὴ ἄνευ φρονήσεως οὐδ' ἄνευ ἀρετῆς· ἡ μὲν γὰρ τὸ τέλος, ἡ δὲ τὰ πρὸς τὸ τέλος ποιεῖ πράττειν.*

[3] 1144, b, 30: *δῆλον οὖν ἐκ τῶν εἰρημένων ὅτι οὐχ οἷόν τε ἀγαθὸν εἶναι κυρίως ἄνευ φρονήσεως οὐδὲ φρόνιμον ἄνευ τῆς ἠθικῆς ἀρετῆς.* X. 8; see p. 178, n. 1 *fin. supra*.

[4] Trendelenburg, *Histor. Beitr.* ii. 385 sq.

[5] Trendelenburg refers on this point to *M. Mor.* ii. 3, 1200, a, 8; *οὔτε γὰρ ἄνευ τῆς φρονήσεως αἱ ἄλλαι ἀρεταὶ γίνονται, οὔθ' ἡ φρόνησις τελεία ἄνευ τῶν ἄλλων ἀρετῶν, ἀλλὰ συνεργοῦσί πως μετ' ἀλλήλων.*

and with the question whether in time virtue here precedes insight or *vice versa*. But the chief difficulty lies in the fact that they condition one another absolutely. Virtue consists in preserving the proper mean, which can only be determined by 'the man of insight.'[1] But, if this be so, insight cannot be limited to the mere discovery of means for the attainment of moral ends: the determination of the true ends themselves is impossible without it; while, on the other hand, prudence merits the name of insight only when it is consecrated to the accomplishment of moral ends.

As insight is the limit of moral virtue in one direction, those activities which spring, not from the will, but from natural impulse (without, however, on that account being wholly withdrawn from the control of the will) stand at the other extreme. To this class belong the passions. After the discussion, therefore, of insight, follows a section of the *Ethics* which treats of the right and wrong attitude towards the passions. Aristotle calls the former temperance, the latter intemperance—distinguishing them from the moral qualities of self-control (σωφροσύνη) and licentiousness,[2] by pointing out that while in the case of the latter the control or tyranny of the desires rests upon a bent of the will founded on principle, in the case of the former it rests merely upon the strength or weakness of the will. For if all morality centres in the relation of reason to desire, and is concerned with pleasure and pain;[3] if further, there is in this respect always a wrong as opposed to

[1] Cf. p. 163.

[2] P. 167 n. 6, *supra*.

[3] See p. 156 sq. *supra*.

the right, a bad as opposed to the good—still this opposition may be of three different degrees and kinds. If we suppose on the one hand a perfected virtue, free alike from all weakness and vice, and on the other a total absence of conscience, we have in the former case a divine and heroic perfection which hardly exists among men, in the latter a state of brutal insensibility which is equally rare.[1] If the character of the will, without being so completely and immutably good or bad as in the cases just supposed, yet exhibits in fact either of these qualities, we have moral virtue or vice.[2] Finally, if we allow ourselves to be carried away by passion, without actually willing the evil, this is defined as intemperance or effeminacy; if we resist the seductions of passion, it is temperance or constancy. Temperance and intemperance have to do with the same object as self-control and licentiousness—namely, bodily pain and pleasure. The difference lies in this, that while in the case of the former wrong conduct springs only from passion, in the case of the latter it springs from the character of the will. If in the pursuit of bodily pleasure or in the avoidance of bodily pain, a man transgresses the proper limit from weakness and not from an evil will,

[1] *Eth.* vii. 8 *init.*: *τῶν περὶ τὰ ἤθη φευκτῶν τρία ἐστὶν εἴδη, κακία ἀκρασία θηριότης. τὰ δ' ἐναντία τοῖς μὲν δυσὶ δῆλα· τὸ μὲν γὰρ ἀρετὴν τὸ δ' ἐγκράτειαν καλοῦμεν· πρὸς δὲ τὴν θηριότητα μάλιστ' ἂν ἁρμόττοι λέγειν τὴν ὑπὲρ ἡμᾶς ἀρετὴν, ἡρωϊκήν τινα καὶ θείαν . . . καὶ γὰρ ὥσπερ οὐδὲ θηρίου ἐστὶ κακία οὐδ' ἀρετὴ, οὕτως οὐδὲ θεοῦ, ἀλλ' ἡ μὲν τιμιώτερον ἀρετῆς, ἡ δ' ἕτερόν τι γένος κακίας*, &c. Of *θηριότης* Aristotle speaks further c. 6, 1148, b, 19, 1149, a, 20, c. 7, 1149, b, 27 sqq. Among bestial desires he reckons *ἀφροδίσια τοῖς ἄρρεσι*, by which, however, as the context shows, he means only passive not active *παιδεραστία*.

[2] See preceding note and the remarks which follow upon the relation of *σωφροσύνη* and *ἀκολασία* to *ἐγκράτεια* and *ἀκρασία*, besides p. 160 sq.

in the former case he is intemperate, in the latter effeminate; if he preserves the proper limit, he is temperate or constant.[1] The latter type of man still differs from

[1] *Ibid.* c. 6: ὅτι μὲν οὖν περὶ ἡδονὰς καὶ λύπας εἰσὶν οἵ τ' ἐγκρατεῖς καὶ καρτερικοὶ καὶ οἱ ἀκρατεῖς καὶ μαλακοί, φανερόν. More accurately, these qualities, like σωφροσύνη and ἀκολασία, refer to bodily pain and pleasure; only in an improper sense can we speak of χρημάτων ἀκρατεῖς καὶ κέρδους καὶ τιμῆς καὶ θυμοῦ. τῶν δὲ περὶ τὰς σωματικὰς ἀπολαύσεις, περὶ ἃς λέγομεν τὸν σώφρονα καὶ ἀκόλαστον, ὁ μὴ τῷ προαιρεῖσθαι τῶν ἡδονῶν διώκων τὰς ὑπερβολὰς καὶ τῶν λυπηρῶν φεύγων . . . ἀλλὰ παρὰ προαίρεσιν καὶ τὴν διάνοιαν, ἀκρατὴς λέγεται, οὐ κατὰ πρόσθεσιν, καθάπερ ὀργῆς, ἀλλ' ἁπλῶς μόνον. Μαλακία refers to the same objects. The ἀκρατής, therefore, and the ἀκόλαστος, the ἐγκρατής and the σώφρων, εἰσὶ μὲν περὶ ταὐτά, ἀλλ' οὐχ ὡσαύτως εἰσίν, ἀλλ' οἱ μὲν προαιροῦνται οἱ δ' οὐ προαιροῦνται. διὸ μᾶλλον ἀκόλαστον ἂν εἴποιμεν, ὅστις μὴ ἐπιθυμῶν ἢ ἠρέμα διώκει τὰς ὑπερβολὰς καὶ φεύγει μετρίας λύπας, ἢ τοῦτον ὅστις διὰ τὸ ἐπιθυμεῖν σφόδρα. C. 8 *init.*: in reference to the said objects, ἔστι μὲν οὕτως ἔχειν ὥστε ἡττᾶσθαι καὶ ὧν οἱ πολλοὶ κρείττους, ἔστι δὲ κρατεῖν καὶ ὧν οἱ πολλοὶ ἥττους· τούτων δ' ὁ μὲν περὶ ἡδονὰς ἀκρατὴς ὁ δ' ἐγκρατής, ὁ δὲ περὶ λύπας μαλακὸς ὁ δὲ καρτερικός . . . ὁ μὲν τὰς ὑπερβολὰς διώκων τῶν ἡδέων ἢ καθ' ὑπερβολὰς ἢ διὰ προαίρεσιν, δι' αὐτὰς καὶ μηδὲν δι' ἕτερον ἀποβαῖνον, ἀκόλαστος . . . ὁ δ' ἐλλείπων ὁ ἀντικείμενος, ὁ δὲ μέσος σώφρων. ὁμοίως δὲ καὶ ὁ φεύγων τὰς σωματικὰς λύπας μὴ δι' ἧτταν ἀλλὰ διὰ προαίρεσιν. The μαλακός, on the other hand (who is defined 1150, b, 1 as ἐλλείπων πρὸς ἃ οἱ πολλοὶ καὶ ἀντιτείνουσι καὶ δύνανται), avoids pain undesignedly. ἀντίκειται δὲ τῷ μὲν ἀκρατεῖ ὁ ἐγκρατής, τῷ δὲ μαλακῷ ὁ καρτερικός. c. 9, 1151, a, 11: the ἀκόλαστος desires immoderate bodily enjoyments on principle (διὰ τὸ πεπεῖσθαι), this desire having its roots in his moral character as a whole (διὰ τὸ τοιοῦτος εἶναι οἷος διώκειν αὐτάς) . . . ἔστι δέ τις διὰ πάθος ἐκστατικὸς παρὰ τὸν ὀρθὸν λόγον, ὃν ὥστε μὲν μὴ πράττειν κατὰ τὸν ὀρθὸν λόγον κρατεῖ τὸ πάθος, ὥστε δ' εἶναι τοιοῦτον οἷον πεπεῖσθαι διώκειν ἀνέδην δεῖν τὰς τοιαύτας ἡδονὰς οὐ κρατεῖ· οὗτός ἐστιν ὁ ἀκρατὴς βελτίων τοῦ ἀκολάστου, οὐδὲ φαῦλος ἁπλῶς· σώζεται γὰρ τὸ βέλτιστον, ἡ ἀρχή. ἄλλος δ' ἐναντίος, ὁ ἐμμενετικὸς καὶ οὐκ ἐκστατικὸς διά γε τὸ πάθος (and so, previously, c. 4, 1146, b, 22). C. 11, 1152, a, 15: the intemperate man acts indeed ἑκών, πονηρὸς δ' οὔ· ἡ γὰρ προαίρεσις ἐπιεικής· ὥσθ' ἡμιπόνηρος. He resembles a state which has good laws but which does not observe them; the πονηρός one in which the laws are observed, but are bad. He differs, therefore, from the ἀκόλαστος in that he feels remorse for his actions (cf. *Eth.* iii. 2, p. 590 *mid.* above) and is therefore not so incurable as the latter. Accordingly, Aristotle compares excess with epilepsy, ἀκολασία with dropsy and consumption (c. 8, 1150, a, 21, c. 9 *init.*). Two kinds of intemperance are further distinguished, ἀσθένεια and προπέτεια, that

the man who is virtuous in the proper sense (σώφρων), in that he is still struggling with evil desires, from which the other is free.[1] The general question of how and how far it is possible to act from intemperance, and to let our better knowledge be overpowered by desire, has been already discussed.[2]

### 3. *Friendship*

Upon the account of all that relates to the virtue of the individual, there follows, as already mentioned, a treatise upon Friendship. So morally beautiful is the conception of this relationship which we find here unfolded, so deep the feeling of its indispensableness, so pure and disinterested the character assigned to it, so kindly the disposition that is indicated, so profuse the wealth of refined and happy thoughts, that Aristotle could have left us no more splendid memorial of his own heart and character. Aristotle justifies himself for admitting a discussion upon Friendship into the *Ethics* partly by the remark that it also belongs to the account of virtue,[3] but chiefly on the ground of the

which is deliberately pursued and that which, springing from violence of temper, is thoughtlessly pursued; of these the latter is described as more curable (c. 8, 1150, b, 19 sqq. c. 11, 1152, a, 18, 27). The inconstancy of the intemperate man finds its opposite extreme in the headstrong and self-willed man (ἰσχυρογνώμων, ἰδιογνώμων, c. 10, 1151, b, 4). The excesses of anger are less to be blamed than those of intemperance (c. 7, c. 8, 1150, a, 25 sqq.; cf. v. 10, 1135, b, 20–29 and p. 113, n. 1); still more excusable are exaggerations of noble impulses (c. 6, 1148, a, 22 sqq.). On anger, fear, compassion, envy, &c. see also *Rhet.* ii. 2, 5–11.

[1] C. 11, 1151, b, 34: ὅ τε γὰρ ἐγκρατὴς οἷος μηδὲν παρὰ τὸν λόγον διὰ τὰς σωματικὰς ἡδονὰς ποιεῖν καὶ ὁ σώφρων, ἀλλ' ὁ μὲν ἔχων ὁ δ' οὐκ ἔχων φαύλας ἐπιθυμίας, καὶ ὁ μὲν τοιοῦτος οἷος μὴ ἥδεσθαι παρὰ τὸν λόγον, ὁ δ' οἷος ἥδεσθαι ἀλλὰ μὴ ἄγεσθαι.

[2] P. 155 (*Eth.* vii. 5.)

[3] ἔστι γὰρ ἀρετή τις ἢ μετ' ἀρετῆς: viii. 1 *init.*

significance it has for human life. Everyone requires friends:[1] the happy man, that he may keep his happiness and enjoy it by sharing it with others;[2] the afflicted, for comfort and support; youth, for advice; manhood, for united action; old age, for assistance. Friendship is a law of nature: it unites parents and children by a natural bond, citizen with citizen, man with man.[3] What justice demands is supplied in the highest degree by friendship, for it produces a unanimity in which there no longer occurs any violation of mutual rights.[4] It is, therefore, not only outwardly but morally necessary.[5] The social impulses of man find in it their most immediate expression and satisfaction; and just for this reason it constitutes in Aristotle's view an essential part of Ethics. For as Ethics is conceived by him in general as Politics, and the moral life as life in society,[6] so no account of moral activity can be to him complete which does not represent it as

[1] For what follows see *Eth.* viii. 1, 1155, a, 4–16.

[2] *Ibid.* ἄνευ γὰρ φίλων οὐδεὶς ἕλοιτ' ἂν ζῆν, ἔχων τὰ λοιπὰ ἀγαθὰ πάντα . . . τί γὰρ ὄφελος τῆς τοιαύτης εὐετηρίας ἀφαιρεθείσης εὐεργεσίας, ἣ γίγνεται μάλιστα καὶ ἐπαινετωτάτη πρὸς φίλους.

[3] *Ibid.* c. 16–26, where *inter alia*: ἴδοι δ' ἄν τις καὶ ἐν ταῖς πλάναις [wanderings] ὡς οἰκεῖον ἅπας ἄνθρωπος ἀνθρώπῳ καὶ φίλον. Cf. ix. 9, 1169, b, 17: ἄτοπον δ' ἴσως καὶ τὸ μονώτην ποιεῖν τὸν μακάριον· οὐθεὶς γὰρ ἕλοιτ' ἂν καθ' αὑτὸν τὰ πάντ' ἔχειν ἀγαθά· πολιτικὸν γὰρ ὁ ἄνθρωπος καὶ συζῆν πεφυκός. On this see further *infra.*

[4] *Ibid.* l. 24 sqq.; hence, φίλων μὲν ὄντων οὐδὲν δεῖ δικαιοσύνης, δίκαιοι δ' ὄντες προσδέονται φιλίας, καὶ τῶν δικαίων τὸ μάλιστα φιλικὸν εἶναι δοκεῖ [the highest justice is the justice of friends].

[5] L. 28; οὐ μόνον δ' ἀναγκαῖόν ἐστιν ἀλλὰ καὶ καλόν.

[6] See on this line p. 186, n. 1. *Eth.* x. 7, 1177, a, 30: ὁ μὲν δίκαιος δεῖται πρὸς οὓς δικαιοπραγήσει καὶ μεθ' ὧν, ὁμοίως δὲ καὶ ὁ σώφρων καὶ ὁ ἀνδρεῖος καὶ τῶν ἄλλων ἕκαστος, only theoretic virtue is self-sufficient; c. 8, 1178, b, 5: ᾗ δ' ἄνθρωπός ἐστι καὶ πλείοσι συζῇ αἱρεῖται τὰ κατ' ἀρετὴν πράττειν. Cf. p. 144, n. 1, *supra.*

socially constructive. The examination, therefore, of Friendship, while completing the study of Ethics, constitutes at the same time the link which unites it with the doctrine of the State.[1]

By friendship Aristotle understands in general every relationship of mutual good will of which both parties are conscious.[2] This relationship, however, will assume a different character according to the nature of the basis upon which it rests. The objects of our attachment are in general three: the good, the pleasurable, and the useful;[3] and in our friends it will be sometimes one of these, sometimes another, which attracts us. We seek their friendship either on account of the advantages which we expect from them, or on account of the pleasure which they give us, or on account of the good that we find in them. A true friendship, however, can be based only upon the last of these three motives. He who loves his friend only for the sake of the profit or the pleasure which he obtains from him, does not truly love him, but only his own advantage and enjoyment; with these accordingly his friendship changes.[4] True friendship exists

[1] Aristotle inserts, however, two sections upon pleasure and happiness between them, in the tenth book—thus connecting the end of the *Ethics* with the beginning, where the end of human effort had been defined as happiness.

[2] VIII. 2, 1155, b, 31 sqq. (where, however, l. 33, *μὴ* must be omitted after *ἐάν*). Friendship is here defined as *εὔνοια ἐν ἀντιπεπονθόσι μὴ λανθάνουσα*, as mutual good will becomes friendship only when each knows that the other wishes him well. The definition of the *φίλος*, *Rhet.* i. 5, 1361, b, 36, as one *ὅστις ἃ οἴεται ἀγαθὰ εἶναι ἐκείνῳ, πρακτικός ἐστιν αὐτῶν δι' ἐκεῖνον*, is a superficial one for rhetorical purposes.

[3] *Ibid.* 1155, b, 18: *δοκεῖ γὰρ οὐ πᾶν φιλεῖσθαι ἀλλὰ τὸ φιλητὸν, τοῦτο δ' εἶναι ἀγαθὸν ἢ ἡδὺ ἢ χρήσιμον.*

[4] *Ibid.* c. 3, 5. Friendships for the sake of profit are formed for the most part among older

between those alone who have spiritual affinities with one another, and is founded upon virtue and esteem. In such a friendship each loves the other for what he is in himself. He seeks his personal advantage and pleasure in that which is good absolutely and in itself. Such a friendship cannot be formed quickly, for the friend must be tried by long intercourse before he can be trusted;[1] nor can it be extended to many, for an inner relationship and a close acquaintance is only possible with a few at the same time.[2] It is, moreover, no mere matter of feeling and inclination, however indispensable these may be to it, but of character,[3] of which it is as lasting an element as the virtue to which it is

people; those that are for the sake of pleasure, among the young. Only the latter require that the friends should live together, and they are least durable when the parties are unlike one another and pursue different ends: the one, for instance (as in unworthy love affairs), his own pleasure, the other his advantage. Cf. c. 10, 1159, b, 15, ix. 1, 1164, a, 3 sqq.

[1] VIII. 4 *init.*: *τελεία δ' ἐστὶν ἡ τῶν ἀγαθῶν φιλία καὶ κατ' ἀρετὴν ὁμοίων· οὗτοι γὰρ τἀγαθὰ ὁμοίως βούλονται ἀλλήλοις ᾗ ἀγαθοί· ἀγαθοὶ δ' εἰσὶ καθ' αὑτούς. οἱ δὲ βουλόμενοι τἀγαθὰ τοῖς φίλοις ἐκείνων ἕνεκα, μάλιστα φίλοι· δι' αὑτοὺς γὰρ οὕτως ἔχουσι καὶ οὐ κατὰ συμβεβηκός* [they are friends for the sake of one another and not of merely accidental object]· *διαμένει οὖν ἡ τούτων φιλία ἕως ἂν ἀγαθοὶ ὦσιν, ἡ δ' ἀρετὴ μόνιμον.* *Ibid.* c. 6 *init.*: *οἱ μὲν φαῦλοι ἔσονται φίλοι δι' ἡδονὴν ἢ τὸ χρήσιμον, ταύτῃ ὅμοιοι ὄντες, οἱ δ' ἀγαθοὶ δι' αὑτοὺς φίλοι· ᾗ γὰρ ἀγαθοί* [for they are so in so far as they are good]. *οὗτοι μὲν οὖν ἁπλῶς φίλοι, ἐκεῖνοι δὲ κατὰ συμβεβηκὸς καὶ τῷ ὡμοιῶσθαι τούτοις.* Cf. n. 2 on following page.

[2] VIII. 7, 1158, a, 10 sqq., and still more fully ix. 10.

[3] VIII. 7, 1157, b, 28: *ἔοικε δ' ἡ μὲν φίλησις πάθει, ἡ δὲ φιλία ἕξει* (on *ἕξις*, see p. 285, n. 3, and p. 153, n. 3, *supra*)· *ἡ γὰρ φίλησις οὐχ ἧττον πρὸς τὰ ἄψυχά ἐστιν, ἀντιφιλοῦσι δὲ μετὰ προαιρέσεως, ἡ δὲ προαίρεσις ἀφ' ἕξεως, καὶ τἀγαθὰ βούλονται τοῖς φιλουμένοις ἐκείνων ἕνεκα, οὐ κατὰ πάθος ἀλλὰ καθ' ἕξιν.* But on the other hand, as is further remarked, mutual pleasure in one another's society is an element in friendship; of morose persons it is said, *ibid.* 1158, a, 7: *οἱ τοιοῦτοι εὔνοι μέν εἰσιν ἀλλήλοις· βούλονται γὰρ τἀγαθὰ καὶ ἀπαντῶσιν εἰς τὰς χρείας· φίλοι δ' οὐ πάνυ εἰσὶ διὰ τὸ μὴ συνημερεύειν μηδὲ χαίρειν ἀλλήλοις, ἃ δὴ μάλιστ' εἶναι δοκεῖ φιλικά.*

equivalent. Every other kind, attaching as it does to what is external and unessential, is merely an imperfect copy of this true friendship.[1] This requires that friends should love only the good in one another, that they should receive only good from one another and return only good.[2] Virtuous men, on the other hand, neither demand nor perform any unworthy service to one another, nor even permit it to be done for them.[3] But just as true friendship rests on likeness and equality of character and spiritual gifts, all friendship may be said to rest upon equality.[4] The equality is

[1] See n. 1 on preceding page, and viii. 8, 1158, b, 4 sqq. c. 10, 1159, b, 2 sqq.

[2] C. 4, 1156, b, 12: ἔστιν ἑκάτερος ἁπλῶς ἀγαθὸς καὶ τῷ φίλῳ [each is not only *per se* good, but a good to his friend]. οἱ γὰρ ἀγαθοὶ καὶ ἁπλῶς ἀγαθοὶ καὶ ἀλλήλοις ὠφέλιμοι. ὁμοίως δὲ καὶ ἡδεῖς· καὶ γὰρ ἁπλῶς οἱ ἀγαθοὶ ἡδεῖς καὶ ἀλλήλοις· ἑκάστῳ γὰρ καθ' ἡδονήν εἰσιν αἱ οἰκεῖαι πράξεις καὶ αἱ τοιαῦται, τῶν ἀγαθῶν δὲ αἱ αὐταὶ ἢ ὅμοιαι. c. 7, 1157, b, 33: φιλοῦντες τὸν φίλον τὸ αὑτοῖς ἀγαθὸν φιλοῦσιν· ὁ γὰρ ἀγαθὸς φίλος γενόμενος ἀγαθὸν γίνεται ᾧ φίλος· ἑκάτερος οὖν φιλεῖ τε τὸ αὑτῷ ἀγαθὸν, καὶ τὸ ἴσον ἀνταποδίδωσι τῇ βουλήσει καὶ τῷ ἡδεῖ· λέγεται γὰρ φιλότης ἡ ἰσότης [or with Cod. K[b] omit ἡ, so that the same proverb is here cited as ix. 8, 1168, b, 8: λέγεται γάρ· φιλότης ἰσότης]· μάλιστα δὴ τῇ τῶν ἀγαθῶν ταῦθ' ὑπάρχει.

[3] C. 10, 1159, b, 4.

[4] See n. 3 on preceding page, and viii. 10, 1159, a, 34: μᾶλλον δὲ τῆς φιλίας οὔσης ἐν τῷ φιλεῖν καὶ τῶν φιλοφίλων ἐπαινουμένων, φίλων ἀρετῇ τὸ φιλεῖν ἔοικεν [which we cannot explain with BRANDIS, p. 1476, as 'the love of friends is like the love of their virtue,' for the words preceding forbid this translation; the meaning is: 'inasmuch as love is a praiseworthy thing, it is a kind of perfection in the friends, or is based upon perfection; as, therefore, the friendship that rests upon actual merits is lasting, that which rests upon true love must be so too]. ὥστ' ἐν οἷς τοῦτο γίνεται κατ' ἀξίαν, οὗτοι μόνιμοι φίλοι καὶ ἡ τούτων φιλία. οὕτω δ' ἂν καὶ οἱ ἄνισοι μάλιστ' εἶεν φίλοι· ἰσάζοιντο γὰρ ἄν. ἡ δ' ἰσότης καὶ ὁμοιότης φιλότης, καὶ μάλιστα μὲν ἡ τῶν κατ' ἀρετὴν ὁμοιότης . . . ἐξ ἐναντίων δὲ μάλιστα μὲν δοκεῖ ἡ διὰ τὸ χρήσιμον γίγνεσθαι φιλία, οἷον πένης πλουσίῳ, ἀμαθὴς εἰδότι· οὗ γὰρ τυγχάνει τις ἐνδεὴς ὤν, τούτου ἐφιέμενος ἀντιδωρεῖται ἄλλῳ. This is so even in the case of lovers. ἴσως δὲ οὐδ' ἐφίεται τὸ ἐναντίον τοῦ ἐναντίου καθ' αὑτὸ, ἀλλὰ κατὰ συμβεβηκός. ἡ δ' ὄρεξις τοῦ μέσου ἐστίν. τοῦτο γὰρ ἀγαθόν. Cf. n. 2, *supra*.

perfect when both parties, besides having like objects in view, are like one another in respect of worth. When, on the other hand, the object of each is different,[1] or when one of the parties is superior to the other,[2] we have proportional instead of perfect equality or analogy: each lays claim to love and service from the other, proportionate to his worth to him.[3] Friendship is thus akin to justice, in which also the question is one of the establishment of equality in the relations of human society;[4] but law and right take

[1] As in the case of the lover and his beloved, or the artist and his pupil, in which the one party seeks pleasure, the other advantage; or of the sophist and his disciple, in which the former teaches and the latter pays; ix. 1, 1164, a, 2–32: cf. p. 193, n. 4, *sup.*

[2] *E.g.* the relation of parents and children, elders and youths, man and wife, ruler and ruled, viii. 8, 1158, a, 8, and elsewhere.

[3] VIII. 8 *init.*: εἰσὶ δ' οὖν αἱ εἰρημέναι φιλίαι ἐν ἰσότητι· τὰ γὰρ αὐτὰ γίγνεται ἀπ' ἀμφοῖν καὶ βούλονται ἀλλήλοις ἢ ἕτερον ἀνθ' ἑτέρου ἀντικαταλλάττονται, οἷον ἡδονὴν ἀντ' ὠφελείας. c. 15 *init.*: τριττῶν δ' οὐσῶν φιλιῶν . . . καὶ καθ' ἑκάστην τῶν μὲν ἐν ἰσότητι φίλων ὄντων τῶν δὲ καθ' ὑπεροχὴν (καὶ γὰρ ὁμοίως ἀγαθοὶ φίλοι γίνονται καὶ ἀμείνων χείρονι, ὁμοίως δὲ καὶ ἡδεῖς, καὶ διὰ τὸ χρήσιμον ἰσάζοντες ταῖς ὠφελείαις καὶ διαφέροντες) τοὺς ἴσους μὲν κατ' ἰσότητα δεῖ τῷ φιλεῖν καὶ τοῖς λοιποῖς ἰσάζειν, τοὺς δ' ἀνίσους τῷ ἀνάλογον ταῖς ὑπεροχαῖς ἀποδιδόναι. c. 8, 1158, b, 17 (after citing examples of friendship in unlike relations): ἑτέρα γὰρ ἑκάστου τούτων ἀρετὴ καὶ τὸ ἔργον, ἕτερα δὲ καὶ δι' ἃ φιλοῦσιν· ἕτεραι οὖν καὶ αἱ φιλήσεις καὶ αἱ φιλίαι. Parents perform a different service for children from that which children perform for parents; so long as each party does the duty that belongs to it they are in a right and enduring relation to each other. ἀνάλογον δ' ἐν πάσαις ταῖς καθ' ὑπεροχὴν οὔσαις φιλίαις καὶ τὴν φίλησιν δεῖ γίνεσθαι, οἷον τὸν ἀμείνω μᾶλλον φιλεῖσθαι ἢ φιλεῖν, καὶ τὸν ὠφελιμώτερον, καὶ τῶν ἄλλων ἕκαστον ὁμοίως· ὅταν γὰρ κατ' ἀξίαν ἡ φίλησις γίγνηται, τότε γίγνεταί πως ἰσότης ὃ δὴ τῆς φιλίας εἶναι δοκεῖ. Cf. c. 13, 1161, a, 21, c. 16, 1163, b, 11: τὸ κατ' ἀξίαν γὰρ ἐπανισοῖ καὶ σώζει τὴν φιλίαν. ix. 1 *init.*: ἐν πάσαις δὲ ταῖς ἀνομοειδέσι φιλίαις [those in which the two parties pursue different ends] τὸ ἀνάλογον ἰσάζει καὶ σώζει τὴν φιλίαν, καθάπερ εἴρηται, οἷον καὶ ἐν τῇ πολιτικῇ τῷ σκυτοτόμῳ ἀντὶ τῶν ὑποδημάτων ἀμοιβὴ γίνεται κατ' ἀξίαν, &c.

[4] VIII. 11 *init.*: ἔοικε δὲ . . . περὶ ταὐτὰ καὶ ἐν τοῖς αὐτοῖς εἶναι ἥ τε φιλία καὶ τὸ δίκαιον· ἐν ἁπάσῃ γὰρ κοινωνίᾳ δοκεῖ τι δίκαιον εἶναι καὶ φιλία δέ. . . . καθ' ὅσον δὲ κοινωνοῦσιν, ἐπὶ τοσοῦτόν ἐστι φιλία· καὶ γὰρ τὸ δίκαιον. Cf. p. 192, n. 4, *supra*.

account in the first instance of relations of inequality, in which individuals are treated in proportion to their worth, and only secondarily of relations of equality, whereas in friendship the reverse is the case: that which is primary and perfect is the friendship between equals, while that which exists between those who are not equals is only secondary.[1]

Aristotle next discusses those connections which are analogous to friendship in the narrower sense. He remarks that every community, even such as exists for a special purpose, involves a kind of friendship, and he shows especially with regard to that form of community which embraces all others—namely, the political—what personal relations correspond to its principal forms, that is, to the various kinds of constitution.[2] From these, which are more of the nature of contracts, he then proceeds to separate the relationships of kindred and pure

[1] VIII. 9 *init.*: οὐχ ὁμοίως δὲ τὸ ἴσον ἔν τε τοῖς δικαίοις καὶ ἐν τῇ φιλίᾳ φαίνεται ἔχειν· ἔστι γὰρ ἐν μὲν τοῖς δικαίοις ἴσον πρώτως τὸ κατ' ἀξίαν [i.e. διανεμητικὸν δίκαιον, which is based upon analogy; see p. 171 sqq.], τὸ δὲ κατὰ ποσὸν [i.e. διορθωτικὸν, which proceeds upon the principle of arithmetical equality] δευτέρως, ἐν δὲ τῇ φιλίᾳ τὸ μὲν κατὰ ποσὸν πρώτως [since perfect friendship, of which all other forms are imperfect imitations, is that which is concluded between persons equally worthy for the sake of their worth; see p. 194, n. 1, and 195, n. 2, *supra*], τὸ δὲ κατ' ἀξίαν δευτέρως: in support of which Aristotle points to the fact that where the inequality is very great, as in the case of men and gods or (c. 13, 1161, a, 32 sqq.) master and slave, no friendship is possible; but in such cases there are not even rights (c. 18, *ibid.*; cf. x. 8, 1178, b, 10). The distinction, as a whole, is rather a trifling one, and it is obvious from the quotations on p. 196, n. 4, and p. 192, n. 4, *supra*, that it was not accepted even by Aristotle himself as exhaustive of the subject. The reason is to be found in the obscurity caused by his failure clearly to separate between the legal and the moral side of justice.

[2] On the special relations of travelling companions, comrades in war, members of clans, guilds, &c., cf. viii. 11; on the State and the various forms of constitution, c. 12 sq., and p. 196, n. 4, *supra*.

friendship.[1] On the same principle he distinguishes later on[2] two kinds of the friendship which rests on mutual advantage, which are related to one another as written to unwritten law: the legal, in which the mutual obligations are definitely fixed, and which therefore is merely a form of contract; and the moral, in which the services to be rendered are left to the good will of the individual. Aristotle further examines the occasions which give rise to discord and separation between friends. He remarks that it is chiefly in friendship for the sake of advantage that mutual recriminations arise, for where friendship is cherished for the sake of virtue there is a rivalry in mutual service, which successfully excludes any sense of unfairness on either side; where it is founded merely upon pleasure it is likewise impossible for either party to complain of unfairness, if he fails to find what he seeks. On the other hand, the man who performs a friendly service in the hope of obtaining a like return, too often finds himself disappointed in his expectations.[3] The same may be said of friendships between unequals. Here also unfair claims are frequently made, whereas justice demands that the more worthy should be recompensed for that which cannot be repaid to him in kind by a corresponding measure of honour.[4] Finally, misunderstandings easily

[1] VIII. 14 *init.*: ἐν κοινωνίᾳ μὲν οὖν πᾶσα φιλία ἐστὶν, καθάπερ εἴρηται· ἀφορίσειε δ' ἄν τις τήν τε συγγενικὴν καὶ τὴν ἑταιρικήν. αἱ δὲ πολιτικαὶ καὶ φυλετικαὶ καὶ συμπλοϊκαὶ, καὶ ὅσαι τοιαῦται, κοινωνικαῖς ἐοίκασι μᾶλλον· οἷον γὰρ καθ' ὁμολογίαν τινὰ φαίνονται εἶναι. εἰς ταύτας δὲ τάξειεν ἄν τις καὶ τὴν ξενικήν. Relationships of kindred are discussed in c. 14, partly also c. 12 sq. We shall return to these in the section upon the Family.

[2] VIII. 15, 1162, b, 21 sqq.

[3] See the interesting discussion in viii. 15. Cf. also what is said on the relation of teacher and scholar, ix. 1, 1164, a, 32 sqq.

[4] VIII. 16.

arise where each party has a different object in view in entering upon the alliance.[1] Aristotle further discusses the cases where a man's duty towards his friend conflicts with his duty towards others, and he lays down the wise principle that in each case we must consider the peculiar obligations which the circumstances involve.[2] He asks whether a friendly alliance should be dissolved if one of the parties to it changes, and he answers that separation is unavoidable in cases where the change is one in the essential conditions of the connection.[3] He surveys the relation between love of self and love of friends, recognising in the latter a reflection of the attitude which the virtuous man maintains towards himself;[4] and he connects with this the question whether one should love oneself or one's friend more, deciding it by pointing out that it is impossible that there should be any real opposition

[1] For the fuller discussion of this case see ix. 1; cf. p. 193, n. 4, *supra*.

[2] IX. 2, especially 1165, a, 16, 30: *ἐπεὶ δ' ἕτερα γονεῦσι καὶ ἀδελφοῖς καὶ ἑταίροις καὶ εὐεργέταις, ἑκάστοις τὰ οἰκεῖα καὶ τὰ ἁρμόττοντα ἀπονεμητέον . . . καὶ συγγενέσι δὴ καὶ φυλέταις καὶ πολίταις καὶ τοῖς λοιποῖς ἅπασιν ἀεὶ πειρατέον τὸ οἰκεῖον ἀπονέμειν, καὶ συγκρίνειν τὰ ἑκάστοις ὑπάρχοντα κατ' οἰκειότητα καὶ ἀρετὴν ἢ χρῆσιν.* When the relation is homogeneous this comparison is easier: when heterogeneous, it is more difficult to make; but even in the latter case it cannot be neglected.

[3] IX. 3: this is, of course, the case where the friendship is based upon pleasure or advantage; or, again, when one has been deceived in a friend, supposing oneself to have been loved disinterestedly (*διὰ τὸ ἦθος*), while with the other it was only a matter of pleasure or profit. If a friend degenerates morally, the first duty is to aid him in recovering himself, but if he proves incurable, separation is the only resource, for one cannot and ought not to love a bad man. If, lastly, as is often the case in youthful companionships, the one outruns the other in moral and intellectual development, true fellowship becomes henceforth impossible; nevertheless, the early connection should be honoured as much as it can be.

[4] IX. 4, *ibid.* 1166, b, 6–29, where the discord in the soul of

between the claims of those two, since true self-love consists in coveting for ourselves what is best—*i.e.* the morally beautiful and great; but we participate in this only the more fully in proportion to the sacrifice we make for a friend.[1] In the same spirit Aristotle expresses himself (to pass over other points [2]) upon the view that the happy man can dispense with friends. He denies this on many grounds.[3] The happy man, he says, needs friends whom he may benefit; the contemplation of their excellence affords a high sense of enjoyment akin to the consciousness of one's own; it is easier to energise in company with others than alone; one gains moral invigoration for oneself from intercourse with good men. Above all, man is by nature formed for association with others, and the happy man can least afford to lead a solitary life;[4] for just as to each man his own life and activity is a good, and his consciousness of that life and activity a pleasure, so also the existence of a friend, in whom his own existence is doubled, and the consciousness of this existence, which he enjoys in intercourse with him, must be a joy and a good.[5] But

the wicked is depicted with remarkable truth, and the moral is drawn consistently with the practical aim of the *Ethics*: εἰ δὴ τὸ οὕτως ἔχειν λίαν ἐστὶν ἄθλιον, φευκτέον τὴν μοχθηρίαν διατεταμένως &c.

[1] IX. 8, see p. 133, n. 2, *supra*, *ad fin.*, p. 151, n. 2, *supra*.

[2] The relation of εὔνοια (ix. 5) and ὁμόνοια (c. 6) to φιλία; the apparent fact that the benefactor usually loves the benefited more than the latter the former, every one loving his own production, as the mother does her children (c. 8); the number of one's friends, which ought to be neither too small nor too great, but ought to include so many ὅσοι εἰς τὸ συζῆν ἱκανοί, seeing that a close relationship is possible only between few, the closest (ἔρως as ὑπερβολὴ φιλίας), only between two; although of political friends (members of the same party) one can have a great number.

[3] IX. 9, cf. viii. 1, 1155, a, 5.

[4] IX, 9, 1169, b, 17; see p. 192, n. 3, *supra*.

[5] *Ibid.* 1170, a, 13 sqq. where,

if we ask further whether we require friends more in prosperity or adversity, the answer is,[1] that it is more *necessary* to possess them in adversity; *nobler* in prosperity.[2] In the former case we are more in need of their help; manly natures, which know how to bear pain alone, have more need of friendly sympathy in the other case. A man ought to be eager to invite his friends to share his joys, loath to have recourse to them in sorrow; on the other hand, he ought to be more ready to hasten to them when they are in trouble than in joy. True friendship, however, demands both.[3] Friendship is an association and community of life, an extension of self-love to embrace others. Each takes the same delight in the existence and activity of his friend as he does in his own, and imparts to his friend what he most values himself.[4] Friendship, therefore,

after first referring to *αἰσθάνεσθαι* and *νοεῖν* as constituents of human life, Aristotle proceeds, l. 19: *τὸ δὲ ζῆν τῶν καθ' αὑτὸ ἀγαθῶν καὶ ἡδέων . . . διόπερ ἔοικε πᾶσιν ἡδὺ εἶναι.* b, 1: *τὸ δ' αἰσθάνεσθαι ὅτι ζῇ τῶν ἡδέων καθ' αὑτό· φύσει γὰρ ἀγαθὸν ζωή, τὸ δ' ἀγαθὸν ὑπάρχον ἐν ἑαυτῷ αἰσθάνεσθαι ἡδύ.* [In being conscious of perception and thought we are conscious of life: *τὸ γὰρ εἶναι ἦν αἰσθάνεσθαι καὶ νοεῖν*, a, 32.] . . . *ὡς δὲ πρὸς ἑαυτὸν ἔχει ὁ σπουδαῖος, καὶ πρὸς τὸν φίλον· ἕτερος γὰρ αὐτὸς ὁ φίλος ἐστίν. καθάπερ οὖν τὸ αὐτὸν εἶναι αἱρετόν ἐστιν ἑκάστῳ, οὕτω καὶ τὸ τὸν φίλον ἢ παραπλησίως. τὸ δ' εἶναι ἦν αἱρετὸν διὰ τὸ αἰσθάνεσθαι αὐτοῦ ἀγαθοῦ ὄντος. ἡ δὲ τοιαύτη αἴσθησις ἡδεῖα καθ' ἑαυτήν, συναισθάνεσθαι ἄρα δεῖ καὶ τοῦ φίλου ὅτι ἔστιν, τοῦτο δὲ γίνοιτ' ἂν ἐν τῷ συζῆν καὶ κοινωνεῖν λόγων καὶ διανοίας· οὕτω γὰρ ἂν δόξειε τὸ συζῆν ἐπὶ τῶν ἀνθρώπων λέγεσθαι, καὶ οὐχ ὥσπερ ἐπὶ τῶν βοσκημάτων τὸ ἐν τῷ αὐτῷ νέμεσθαι.*

[1] IX. 11.

[2] A similar distinction between *ἀναγκαῖον* and *ἀγαθὸν* or *καλὸν* has already come before us, p. 165, n. 1 (from *Metaph.* i. 2), 192, n. 5, *supra*. Cf. *Polit.* vii. 14, 1333, a, 36: *τὰ δ' ἀναγκαῖα καὶ χρήσιμα τῶν καλῶν ἕνεκεν.*

[3] *ἡ παρουσία δὴ τῶν φίλων*, c. 11 concludes, *ἐν ἅπασιν αἱρετὴ φαίνεται.*

[4] See n. 5 above, and ix. 12 (at the end of the section upon friendship): *ἆρ' οὖν, ὥσπερ τοῖς ἐρῶσι τὸ ὁρᾶν ἀγαπητότατόν ἐστι, . . . οὕτω καὶ τοῖς φίλοις αἱρετώτατόν ἐστι τὸ συζῆν; κοινωνία γὰρ ἡ φιλία. καὶ ὡς πρὸς ἑαυτὸν ἔχει, οὕτω καὶ πρὸς*

is the most conspicuous example of the natural sociableness and solidarity of mankind. It is the bond that unites men to one another, not in any merely outward manner, as by a community of legal rights, but by the deepest instincts of their nature. In friendship individual morality expands into a spiritual communion. But this communion is still limited and dependent on the accidental circumstances of personal relations. It is in the State that it first receives a wider scope and a more solid foundation in fixed laws and permanent institutions.

*τὸν φίλον. περὶ αὐτὸν δ᾽ ἡ αἴσθησις ὅτι ἔστιν αἱρετή· καὶ περὶ τὸν φίλον δή· ἡ δ᾽ ἐνέργεια γίνεται αὐτοῖς ἐν τῷ συζῆν,* &c.

# CHAPTER XIII

## PRACTICAL PHILOSOPHY—(CONTINUED)

## *B.—Politics*[1]

### 1. *Necessity, Nature and Function of the State*

Of Aristotle's theory of the State it may be said, as of some other portions of his philosophy, that there are several points in it on which it is difficult for us to obtain certainty or completeness of view, owing to the state in which his treatise on Politics has come down to us. So rare is the union, so unequal, where they exist, the distribution, of the powers and qualities which we here find combined in equal proportions, that the eight books of the *Politics* of Aristotle form, indeed, one of the most remarkable works that antiquity has bequeathed to us. With the most comprehensive knowledge of the facts of history and the completest insight into the actual conditions of social life, Aristotle here combines the subtlest power of marshalling in the service of scientific thought the materials which are so supplied. But the completion of the work was

[1] On the more recent literature which treats of Aristotle's theory of the State as a whole and in its several parts, see HILDENBRAND, *Gesch. u. Syst. der Rechts- und Staatsphilosophie* (Leipzig, 1860), i. 342 sqq.; UEBERWEG, *Grundriss*, i. 203 sq. (5th ed. 1876); SUSEMIHL, *Jahrb. f. Philol.* vol. xcix. 593, ciii. 119, and BURSIAN'S *Jahresbericht*, 1874, p. 592 sq. 1877, p. 372 sqq.

probably prevented by the death of the author;[1] and when the sketches which he had left came to be put together,[2] it was impossible to avoid *lacunæ*, and these must

[1] See Appendix.

[2] Here, as in the case of the *Metaphysics* (see p. 76 sq. *supra*), the notes left by Aristotle seem to have been simply put together without revision or alteration. Tradition does not tell us who undertook this task; but as Theophrastus is named as the editor of the *Metaphysics* (p. 79), it may have been he; which would explain the fact that the *Politics* seems to have been in circulation also under his name. It is alluded to by Diog. v. 24, in the curious words: πολιτικῆς ἀκροάσεως ὡς ἡ Θεοφράστου ά—ή. As they stand, these words give no conceivable sense, as it could not have been intended to explain the nature of Aristotle's *Politics* by comparing them with Theophrastus's as the better known. The question, therefore, rises whether the words πολ. ἀκροάσεως ά—ή are not alone original, ἡ Θεοφράστου having been first placed in the margin by another hand, and then incorporated in the text as ἡ Θεοφρ. with ὡς taken from ἀκροάσεως preceding it. KROHN (*ibid.* 51) supposes that the conjunction of the works of Theophrastus and Aristotle in the cellar at Scepsis may partly explain why much that belongs to Theophrastus should have found its way into the *Politics* of Aristotle, and why it finally came to be thought that Theophrastus was its author; but the indications given, p. 150, *supra*, of the use of the work up to the time of Cicero, make it impossible to accept this view, even were we to grant that the note, ὡς ἡ Θεοφρ., did not find a place in Hermippus's enumeration until after Apellicon's discovery of the books, and to treat Krohn's elimination of the supposed Theophrastian passages from our text as less arbitrary than it is.—The same arguments hold good also against HILDENBRAND'S (*Gesch. d. Rechts- u. Staatsphil.* i. 360) and ONCKEN'S (*Staatsl. d. Arist.* i. 65 sq.) supposition that the *Politics* at the death of the author existed only in the original MS., and that between the death of Theophrastus and Apellicon's discovery it had disappeared. It may, indeed, appear strange that during this period we find such meagre traces of it, but this finds sufficient explanation in the feebleness of the interest taken at this time in political investigations, and the poverty of the philosophical remains that have survived to us from it. Even in the later ages, this most important account of Aristotle's political doctrines is seldom mentioned (see the passages cited by SUSEMIHL, p. xlv, who follows SPENGEL, *Ueb. d. Pol. d. Arist.* [*Abh. d. Münchn. Akad.* v. 44], and HEITZ, *Verl. Schr. d. Ar.* 242—hardly a dozen in fifteen centuries), and, apart from the extract in STOBÆUS (see p. 203, *supra*), is not discussed with any fullness except by the Platonist EUBULUS (Part iii. a, 719, b, 408, 1. PORPH. *V. Plot.* 15, 20), a part of whose

always remain a serious hindrance to the student of the *Politics*, even although the leading thoughts and fundamental features of the treatise are hardly affected by them.

However valuable individual virtue and the knowledge which instructs us in it may be, Aristotle yet finds, as was to be expected in a Greek, that both are inadequate so long as they are confined to individuals. Morality finds its first perfect realisation in the State. In itself, the moral activity of a community is greater, more perfect, nobler, and more divine than that of individuals.[1] But even the continuous production and maintenance of virtue is dependent wholly upon the State. Mere instruction is insufficient in the vast majority of cases: he who is a slave to desire neither listens to admonition nor understands it. It is fear of punishment, not aversion to evil, that moves him. He knows nothing of joy in what is noble for its own sake. How is it possible, then, to correct inveterate tendencies by mere exhortation? Habit and education alone are of any avail, not only with children, but with adults as well, for these also are for the most part amenable only to legal constraint. But a good education and stringent laws are possible only in the State.[2] Only in the State can man attain his proper good.[3] Life in the State is the natural vocation of man. His nature has

Ἐπίσκεψις τῶν ὑπ' Ἀριστοτέλους ἐν δευτέρῳ τῶν Πολιτικῶν πρὸς τὴν Πλάτωνος Πολιτείαν ἀντειρημένων has been made public by MAI, *Collect. Vatic.* ii. 671 sqq.

[1] *Eth.* i. 1, 1094, b, 7: εἰ γὰρ καὶ ταὐτόν ἐστιν [τὸ τέλος] ἑνὶ καὶ πόλει, μεῖζόν γε καὶ τελεώτερον τὸ τῆς πόλεως φαίνεται καὶ λαβεῖν καὶ σώζειν· ἀγαπητὸν μὲν γὰρ καὶ ἑνὶ μόνῳ, κάλλιον δὲ καὶ θειότερον ἔθνει καὶ πόλεσιν.

[2] *Ibid.* x. 10.

[3] *Polit.* i. 1 *init.* Every society aims at some good, μάλιστα δὲ καὶ τοῦ κυριωτάτου πάντων [sc. στοχάζεται] ἡ πασῶν κυριωτάτη καὶ πάσας περιέχουσα τὰς ἄλλας· αὕτη

destined him for society,[1] as is clear from the fact that he alone of all creatures possesses the power of speech.[2] In the State moral activity finds at once its condition and completion. The State is the moral whole, and is therefore prior in itself to the individual and the family:[3] only in the order of its origin in time and of human need does it come after them.[4] Only a being who is more or who is less than human can live apart from the community of the State. To man it is indispensable. For as with moral culture he is the noblest of all creatures, so without law and right he is the worst—and the adjustment of rights is the function of the community at large.[5] The morality, therefore,

δ' ἐστὶν ἡ καλουμένη πόλις καὶ ἡ κοινωνία ἡ πολιτική. *Eth.* i. 1, 1094, b, 6: τὸ ταύτης [τῆς πολιτικῆς] τέλος περιέχοι ἂν τὰ τῶν ἄλλων, ὥστε τοῦτ' ἂν εἴη τἀνθρώπινον ἀγαθόν. How far this is consistent with the higher place assigned to θεωρία has been already discussed, p. 143 sq. *supra*.

[1] *Polit.* i. 2, 1253, a, 2: ὅτι τῶν φύσει ἡ πόλις ἐστί, καὶ ὅτι ἄνθρωπος φύσει πολιτικὸν ζῷον. With a reference to this passage, iii. 6, 1278, b, 19: φύσει μέν ἐστιν ἄνθρωπος ζῷον πολιτικόν, διὸ καὶ μηδὲν δεόμενοι τῆς παρ' ἀλλήλων βοηθείας οὐκ ἔλαττον ὀρέγονται τοῦ συζῆν. *Eth.* ix. 9; see p. 192, n. 3, *supra*; cf. preceding note.

[2] *Polit.* i. 2, 1253, a, 7 sqq.

[3] *Polit.* i. 2, 1253, a, 19: πρότερον δὴ τῇ φύσει πόλις ἢ οἰκία καὶ ἕκαστος ἡμῶν ἐστιν. τὸ γὰρ ὅλον πρότερον ἀναγκαῖον εἶναι τοῦ μέρους. . . . εἰ γὰρ μὴ αὐτάρκης ἕκαστος χωρισθείς, ὁμοίως τοῖς ἄλλοις μέρεσιν ἕξει πρὸς τὸ ὅλον. 1252, b, 30: διὸ πᾶσα πόλις φύσει ἐστίν, εἴπερ καὶ αἱ πρῶται κοινωνίαι· τέλος γὰρ αὕται ἐκείνων, ἡ δὲ φύσις τέλος ἐστίν.

[4] Only in this sense is it said, *Eth.* viii. 14, 1162, a, 17: ἄνθρωπος γὰρ τῇ φύσει συνδυαστικὸν μᾶλλον ἢ πολιτικόν, ὅσῳ πρότερον καὶ ἀναγκαιότερον οἰκία πόλεως. That is ἀναγκαῖον which serves to satisfy a physical need, and is therefore definitely distinct from τὸ καλόν; see p. 201, n. 2, *supra*. But this does not prejudice the subordination of every other social bond to the political. On the other hand, the State and the household seem rather to be regarded by Eudemus as parallel institutions (see *Eud.* vii. 10, 1242, a, 22: ὁ γὰρ ἄνθρωπος οὐ μόνον πολιτικὸν ἀλλὰ καὶ οἰκονομικὸν ζῷον), economics being also separated by him from politics; see p. 186, n. 4, *supra*.

[5] *Polit.* i. 2, 1253, a, 27: ὁ δὲ μὴ δυνάμενος κοινωνεῖν, ἢ μηθὲν

of individuals has its indispensable complement in the State: Ethics is fulfilled in Politics.

It follows from what has just been said, that the function of the State cannot, according to Aristotle, be limited to that which even then, it would seem, was held by some, as it has been held by a much larger number in modern times, to be its only one—namely, the protection of person and property. The State certainly owes its origin, as Aristotle admits, primarily to a human need. Families unite in communities for purposes of intercourse; communities again into States. But the conception of the State is not thereby exhausted. Its function does not stop with care for the physical wellbeing of its members, since this care is extended to slaves and domestic animals as well as to citizens; nor even with the common protection against external enemies and security of intercourse. Such a community is an alliance and not a commonwealth, nor is it less so because the allies form a geographical unit. While it is indispensable to the existence of a political community that all these objects should be secured, yet a State, in the proper sense of the word, first arises from the effort of the citizens to realise a perfect and

δεόμενος δι' αὐτάρκειαν, οὐθὲν μέρος πόλεως, ὥστε ἢ θηρίον ἢ θεός (as he has said already at line 3 of the same page:—ὁ ἄπολις διὰ φύσιν καὶ οὐ διὰ τύχην ἤτοι φαῦλός ἐστιν ἢ κρείττων ἢ ἄνθρωπος). φύσει μὲν οὖν ἡ ὁρμὴ ἐν πᾶσιν ἐπὶ τὴν τοιαύτην κοινωνίαν· ὁ δὲ πρῶτος συστήσας μεγίστων ἀγαθῶν αἴτιος. ὥσπερ γὰρ καὶ τελεωθὲν βέλτιστον τῶν ζῴων ἄνθρωπός ἐστιν, οὕτω καὶ χωρισθὲν νόμου καὶ δίκης χείριστον πάντων. χαλεπωτάτη γὰρ ἀδικία ἔχουσα ὅπλα· ὁ δ' ἄνθρωπος ὅπλα ἔχων φύεται φρονήσει καὶ ἀρετῇ, οἷς ἐπὶ τἀναντία ἔστι χρῆσθαι μάλιστα. διὸ ἀνοσιώτατον καὶ ἀγριώτατον ἄνευ ἀρετῆς . . . ἡ δὲ δικαιοσύνη πολιτικόν· ἡ γὰρ δίκη πολιτικῆς κοινωνίας τάξις ἐστίν· ἡ δὲ δίκη τοῦ δικαίου κρίσις.

self-sufficing social life.[1] The aim of the State is, in a word, the happiness of the citizens.[2] Happiness, however, consists in the unimpeded exercise of virtue.[3] The happiness of a whole people cannot differ from that of individuals. Accordingly, the highest function of the State and of statecraft is to form and educate citizens,

[1] *Polit.* i. 2, 1252, b, 12: *ἡ μὲν οὖν εἰς πᾶσαν ἡμέραν συνεστηκυῖα κοινωνία κατὰ φύσιν οἶκός ἐστιν. . . . ἡ δ' ἐκ πλειόνων οἰκιῶν κοινωνία πρώτη χρήσεως ἕνεκεν μὴ ἐφημέρου κώμη. μάλιστα δὲ κατὰ φύσιν ἔοικεν ἡ κώμη ἀποικία οἰκίας εἶναι.* From the extension of the family springs the village community, which in the earliest times is ruled by the head of the family . . . *ἡ δ' ἐκ πλειόνων κωμῶν κοινωνία τέλειος πόλις, ἡ δὴ πάσης ἔχουσα πέρας τῆς αὐταρκείας ὡς ἔπος εἰπεῖν, γινομένη μὲν οὖν τοῦ ζῆν ἕνεκεν, οὖσα δὲ τοῦ εὖ ζῆν. διὸ πᾶσα πόλις φύσει ἐστίν, εἴπερ καὶ αἱ πρῶται κοινωνίαι· τέλος γὰρ αὕτη ἐκείνων, ἡ δὲ φύσις τέλος ἐστίν.* iii. 9, 1280, a, 25: Civil society exists not merely for the protection of property, nor yet *τοῦ ζῆν μόνον ἕνεκεν, ἀλλὰ μᾶλλον τοῦ εὖ ζῆν (καὶ γὰρ ἂν δούλων καὶ τῶν ἄλλων ζῴων ἦν πόλις· νῦν δ' οὐκ ἔστι διὰ τὸ μὴ μετέχειν εὐδαιμονίας μηδὲ τοῦ ζῆν κατὰ προαίρεσιν), μήτε συμμαχίας ἕνεκεν, ὅπως ὑπὸ μηδενὸς ἀδικῶνται, μήτε διὰ τὰς ἀλλαγὰς καὶ τὴν χρῆσιν τὴν πρὸς ἀλλήλους.* Being merely confederates, such partners are neither under any common authority *οὔτε τοῦ ποίους τινὰς εἶναι δεῖ φροντίζουσιν ἅτεροι τοὺς ἑτέρους, οὐδ' ὅπως μηδεὶς ἄδικος ἔσται τῶν ὑπὸ τὰς συνθήκας μηδ' ἄλλην μοχθηρίαν ἕξει μηδεμίαν, ἀλλὰ μόνον ὅπως μηδὲν ἀδικήσουσιν ἀλλήλους. περὶ δ' ἀρετῆς καὶ κακίας πολιτικῆς διασκοποῦσιν ὅσοι φροντίζουσιν εὐνομίας. ᾗ καὶ φανερὸν ὅτι δεῖ περὶ ἀρετῆς ἐπιμελὲς εἶναι τῇ γ' ὡς ἀληθῶς ὀνομαζομένῃ πόλει, μὴ λόγου χάριν.* Every other combination is an alliance, not a State; every law which does not aim at making the citizens just and good is a *συνθήκη*, not a *νόμος*. Nor does it alter matters if the parties in question inhabit the same place. *φανερὸν τοίνυν, ὅτι ἡ πόλις οὐκ ἔστι κοινωνία τόπου καὶ τοῦ μὴ ἀδικεῖν σφᾶς αὐτοὺς καὶ τῆς μεταδόσεως χάριν· ἀλλὰ ταῦτα μὲν ἀναγκαῖον ὑπάρχειν, εἴπερ ἔσται πόλις, οὐ μὴν οὐδ' ὑπαρχόντων τούτων ἁπάντων ἤδη πόλις, ἀλλ' ἡ τοῦ εὖ ζῆν κοινωνία καὶ ταῖς οἰκίαις, καὶ τοῖς γένεσι, ζωῆς τελείας χάριν καὶ αὐτάρκους.*

[2] *Polit.* iii. 9, 1280, b, 39: *τέλος μὲν οὖν πόλεως τὸ εὖ ζῆν . . . πόλις δὲ ἡ γενῶν καὶ κωμῶν κοινωνία ζωῆς τελείας καὶ αὐτάρκους. τοῦτο δ' ἐστίν, ὡς φαμέν, τὸ ζῆν εὐδαιμόνως καὶ καλῶς. τῶν καλῶν ἄρα πράξεων χάριν θετέον εἶναι τὴν πολιτικὴν κοινωνίαν, ἀλλ' οὐ τοῦ συζῆν.* vii. 8, 1328, a, 35: *ἡ δὲ πόλις κοινωνία τίς ἐστι τῶν ὁμοίων, ἕνεκεν δὲ ζωῆς τῆς ἐνδεχομένης ἀρίστης. ἐπεὶ δ' ἐστὶν εὐδαιμονία τὸ ἄριστον, αὕτη δὲ ἀρετῆς ἐνέργεια καὶ χρῆσίς τις τέλειος* &c.

[3] See p. 137 sqq. *supra*.

to cherish in them all moral and spiritual fitness, and to furnish the impulse to an inherently noble and satisfying activity.[1] The qualities which make a good citizen and a brave man are thus seen to be the same: the completed virtue of a citizen is not *a* virtue, but virtue in its application to civic life.[2] Virtue, however,

[1] See p. 208, n. 1, *supra*; *Eth.* i. 13, 1102, a, 7, ii. 1, 1103, b, 3; *Polit.* vii. 2 *init.*, c. 15 *init.*

[2] *Polit.* iii. 4: Is the virtue of the ἀνὴρ ἀγαθὸς identical with that of the πολίτης σπουδαῖος or not? Absolutely identical they certainly are not (as has already been remarked, *Eth.* v. 5, 1130, b, 28), for not only does each different form of State make peculiar demands upon its members (civil virtue, therefore, will have a different character under different forms of constitution), but the State itself consists of heterogeneous elements, and not merely of men of mature virtue. In so far, on the other hand, as the State may be regarded as a free community, as being the government of freemen and equals (πολιτικὴ ἀρχὴ, ἀρχὴ τῶν ὁμοίων καὶ ἐλευθέρων, 1277, b, 7 sqq.), they coincide, for no one is qualified to be a member of such a State who does not know both how to command and how to obey—in other words, who is not an ἀνὴρ ἀγαθός. Hence, c. 18, 1288, a, 37, with reference to c. 4: ἐν δὲ τοῖς πρώτοις ἐδείχθη λόγοις ὅτι τὴν αὐτὴν ἀναγκαῖον ἀνδρὸς ἀρετὴν εἶναι καὶ πολίτου τῆς πόλεως τῆς ἀρίστης. vii. 1, 1323, b, 33: ἀνδρία δὲ πόλεως καὶ δικαιοσύνη καὶ φρόνησις τὴν αὐτὴν ἔχει δύναμιν καὶ μορφὴν, ὧν μετασχὼν ἕκαστος τῶν ἀνθρώπων λέγεται δίκαιος καὶ φρόνιμος καὶ σώφρων. c. 9, 1328, b, 37: ἐν τῇ κάλλιστα πολιτευομένῃ πόλει καὶ τῇ κεκτημένῃ δικαίους ἄνδρας ἁπλῶς, ἀλλὰ μὴ πρὸς τὴν ὑπόθεσιν (in reference to a given State; the πρὸς τὴν ὑπόθεσιν δίκαιος is he who, while he sides with existing laws and institutions, defends even what is severe and unjust in them). c. 13, 1332, a, 36: καὶ γὰρ εἰ πάντας ἐνδέχεται σπουδαίους εἶναι, μὴ καθ' ἕκαστον δὲ τῶν πολιτῶν [even although it be possible for the community as a whole to be excellent while each of the individuals is not, the imperfections of the members being compensated for by the perfection of the whole; we shall have to allude to this further on in referring to *Polit.* iii. 11, 13, 15], οὕτως αἱρετώτερον [yet the latter, viz. that all the individuals should be virtuous, is the more desirable]; ἀκολουθεῖ γὰρ τῷ καθ' ἕκαστον καὶ τὸ πάντας. c. 14, 1332, a, 11: As the virtue of the ἄρχων and the best man is one and the same, but in the best State all are fitted to govern, the legislation must aim at making all the citizens in it good men. c. 15 *init.*: ἐπεὶ δὲ . . . τὸν αὐτὸν ὅρον ἀναγκαῖον εἶναι τῷ τε ἀρίστῳ ἀνδρὶ καὶ τῇ ἀρίστῃ πολιτείᾳ. According to these explanations, the words (iii. 4, 1277, a, 4) εἰ μὴ πάντας ἀναγκαῖον ἀγαθοὺς εἶναι τοὺς

is twofold—theoretic and practical. To ask which of these is superior is equivalent here to asking whether peace or war is to be the ultimate aim of civil life; since the proper occupation for times of peace is, according Aristotle, Science, whereas in war the main object is the acquisition of the greatest possible power of action.[1] But we have already seen that Aristotle places the theoretic life much higher than the practical, and accordingly we are not surprised to find him sharply criticising those constitutions which, like the Spartan and the Cretan, are adapted rather for war than for peace. Such States, he says, have only conquests in view, as if every kind of dominion over others, upon whomsoever it may be forced and by whatsoever means achieved, were permissible; and on this account they nourish in individuals the spirit of violence and ambition, and estrange them from the arts of peace, and so when their dominion is secured and the martial activity should give place to the peaceful, such States forthwith fall into decay. Aristotle himself regards the peaceful occupations as the true object of social life; war he permits only as a means to peace, only, therefore, in so far

ἐν τῇ σπουδαίᾳ πόλει πολίτας, occurring, moreover, as they do in a dialectical discussion (an ἀπορία), are not to be understood as though Aristotle himself intended to deny that necessity. He means them merely as a preliminary affirmation of the condition under which alone civil and individual virtue absolutely coincide. Whether and under what circumstances this condition is present, is the subject of the discussion that follows.

[1] This parallel, however, is only partially relevant. Aristotle tells us himself (*Polit.* vii. 15, 1334, a, 22 sqq.) that even moral virtues, such as justice and self-command, are especially indispensable in time of peace. Moreover, while scientific activity certainly needs peace most, yet it can only at best be practised by a small minority of the citizens.

as it is necessary for self-defence or for the subjugation of those whom Nature has destined to serve. He demands, accordingly, that besides bravery and constancy, which are necessary in order that the State may assert its independence, the virtues of peace—namely, justice, temperance, and scientific culture (φιλοσοφία)—should also be cultivated.[1] It cannot be denied that the aim of the State is thus placed sufficiently high. It is not, indeed, to Aristotle the absolutely highest, as it was to the Greeks of an earlier age. To him as to his teacher the highest is that scientific activity which in itself can dispense with the society of others. This alone it is in which man attains the highest perfection permitted him by his nature, in which he transcends the limits of humanity and lives the life of God. Only as man does he require practical virtue and the community in which it manifests itself.[2] As man, however, these are wholly indispensable to him. But the highest form of community, embracing and completing every other, is the State. Its aim comprehends every other moral aim, while its institutions not only give security and stability to the moral life by means of law and education, but extend it over a whole people. We thus arrive at a definition of the highest function of the State as that of making the citizens happy by means of virtue. This is essentially the same view of civil life that we have already met with in Plato. In only a single feature do the two philosophers differ from one another, but it

[1] *Polit.* vii. 2, 3, c. 14, 15; *Eth.* x. 7, 1177, b, 4. Cf. also p. 143, n. 1, and on war for the acquisition of slaves, *Polit.* i. 8, 1256, b, 23.

[2] Cf. the citations from *Eth.* x. 8, and other passages, p. 143, n. 1.

is a fundamental one. In Plato the State, like everything else upon earth, is essentially related to the other world, whence all truth and reality spring. This is the ultimate source of his political idealism. Just as the Ideas belong to that supersensible world, so the philosophical rulers to whom he entrusts the realisation of these Ideas in the State have their home there also, and only unwillingly descend to take part in earthly affairs. The State, therefore, serves not only for moral education, but also as a preparation for that higher life of the disembodied spirit into which a beautiful glimpse is opened to us at the end of the *Republic*. Of this view of the State and of human life in general, we find no trace in Aristotle. We have simply and solely here to do with the present life and with that happiness which is the immediate outcome of moral and spiritual perfection. It is not the aim of the State to represent an ideal world beyond or to prepare for another life, but to satisfy the wants of the present. And just as he does not require philosophy to be the ruling principle in politics, as we shall see immediately, so, on the other hand, he sees no opposition between these two, such as might make the political activity of the philosopher appear as a painful sacrifice. He holds that human nature has two equally essential sides which find their satisfaction in the practical activity of the statesman and the theoretic activity of the philosopher respectively. None but God can live in contemplation alone. Man as man cannot renounce practical life in a community. It is no mere compulsion, but a moral need, which makes the State and the life which it offers a necessity for him.

It is the aim of the *Politics* to investigate the means by which the State fulfils its functions, the various more or less perfect conceptions of the nature of these functions, and the institutions that correspond to them. But before applying himself to this investigation, Aristotle in the first book of his political treatise discusses the Family and the Household; for he holds that in order perfectly to understand the nature of the State, it is necessary to analyse it into its simplest constituents.[1]

## 2. *The Household as a Constituent Element of the State*

The State is the most perfect form of human society, and as such is prior to every other in order of thought. But just as elsewhere in Aristotle that which is first in essence is last in origin, the primordial principle the last result, so the first natural form of society—namely, the Family—precedes the political as the condition of its origin in time.[2]

The family is constituted by means of the three relations of husband and wife, parents and children, master and servant.[3]

[1] *Polit.* i. 1, 1252, a, 17 (after touching upon the distinction between political and household economy): δῆλον δ' ἔσται τὸ λεγόμενον ἐπισκοποῦσι κατὰ τὴν ὑφηγημένην μέθοδον [by which he means not so much his method, as the plan which he intends to follow in the investigation, and which he had indicated at the end of the *Ethics*]. ὥσπερ γὰρ ἐν τοῖς ἄλλοις τὸ σύνθετον μέχρι τῶν ἀσυνθέτων ἀνάγκη διαιρεῖν (ταῦτα γὰρ ἐλάχιστα μόρια τοῦ παντὸς), οὕτω καὶ πόλιν ἐξ ὧν σύγκειται σκοποῦντες ὀψόμεθα καὶ περὶ τούτων μᾶλλον, τί τε διαφέρουσιν ἀλλήλων καὶ εἴ τι τεχνικὸν ἐνδέχεται λαβεῖν περὶ ἕκαστον τῶν ῥηθεντων. Cf. c. 3 *init.*

[2] *Polit.* i. 2.

[3] *Ibid.* c. 2, c. 3, c. 12 *init.* Aristotle describes, in c. 2, the relations of man and wife, slave and freeman, as the two fundamental ones. He begins with the discussion of the latter, c. 3 sqq., and connects with it that of the

The relation of husband and wife Aristotle treats as an essentially moral one. A natural instinct forms, indeed, its basis, but the union must assume the higher forms of friendship, good will, and mutual service.[1] The reason of this is that the moral capacities of each are partly similar and partly different, and that therefore a free relation between them is not only possible, but is demanded by the need of both to find their complement. They stand, in one sense, upon equal terms. The wife as well as the husband has a will of her own and a virtue proper to herself. She, too, must be treated as a free person. Where the women are slaves, this is a proof to Aristotle that the men also are slaves by nature, since a free man can unite himself only with a free woman.[2] On the other hand, it is also true that the moral capacities of the woman differ in kind and in degree from those of the man: her will is weak (ἄκυρος), her virtue less perfect and self-sufficient, her vocation, as a whole, is not independent production but quiet retirement and domesticity.[3] The true relation, accordingly,

different kinds of property—reserving the two remaining relations, c. 13, 1260, b, 8, for subsequent treatment, on the ground that the education of women and children and all household arrangements must depend upon the character and aim of the State. The discussion of these, however, is not resumed in the *Politics* as we have it, what is said in lib. vii. and viii. on education being without special reference to family life. For the purpose of exposition, it is best to take the order which is more natural to us, *i.e.* to discuss the family *before* slavery and property.

[1] *Polit.* i. 2 *init.*; *Eth.* viii. 14, 1162, a, 16 sqq.; cf. *Œc.* i. 3 sq.

[2] *Polit.* i. 2, 1252, a, 1 sqq. c. 13, 1260, a, 12 sqq.; *Eth. ibid.*

[3] *Polit.* i. 5, 1254, b, 13, c. 13, 1260, a, 12, 20 sqq. iii. 4, 1277, b, 20 sqq.; *Œc.* i. 3, *ad fin.*; cf. *Hist. An.* ix. 1, where differences of character and disposition are discussed in so far as they proceed from difference of sex. See esp. 608, a, 35: τὰ θήλεα μαλακώτερα καὶ κακουργότερα καὶ ἧττον

of woman to man can only exist where the man, as the superior, bears rule, while the woman is treated as a free partner in the household, and as such is not only protected from every kind of injustice, but also has her own proper sphere, with which the man does not interfere. It is an association of free members with unequal rights—in other words, it is, as Aristotle frequently describes it, an aristocracy.[1]

Less free is the relation between Parent and Child, in discussing which, however, Aristotle confines himself characteristically enough almost solely to the relation between father and son.[2] In spite of the advanced views just quoted, mother and daughter have no further attention paid to them. As Aristotle had compared the married relation to an aristocracy, he compares that of father and son to a monarchy.[3] The child has, strictly speaking, no rights as against his

ἁπλᾶ καὶ προπετέστερα καὶ περὶ τὴν τῶν τέκνων τροφὴν φροντιστικώτερα, τὰ δ' ἄρρενα ἐναντίως θυμωδέστερα, καὶ ἀγριώτερα καὶ ἁπλούστερα καὶ ἧττον ἐπίβουλα . . . γυνὴ ἀνδρὸς ἐλεημονέστερον καὶ ἀρίδακρυ μᾶλλον, ἔτι δὲ φθονερώτερον καὶ μεμψιμοιρότερον, καὶ φιλολοίδορον μᾶλλον καὶ πληκτικώτερον. ἔστι δὲ καὶ δύσθυμον μᾶλλον τὸ θῆλυ τοῦ ἄρρενος καὶ δύσελπι, καὶ ἀναιδέστερον καὶ ψευδέστερον, εὐαπατητότερον δὲ καὶ μνημονικώτερον, ἔτι δὲ ἀγρυπνότερον καὶ ὀκνηρότερον καὶ ὅλως ἀκινητότερον τὸ θῆλυ τοῦ ἄρρενος, καὶ τροφῆς ἐλάττονός ἐστιν. βοηθητικώτερον δὲ, ὥσπερ ἐλέχθη, καὶ ἀνδρειότερον τὸ ἄρρεν τοῦ θήλεός ἐστιν. We may contrast the careful observation upon which this comparison is based with the levity with which Plato (*Rep.* v. 452 E sqq.; cf. *Ph. d. Gr.* i. p. 775) denies that there is any inherent difference between the sexes beyond that of their natural functions.

[1] *Eth. N.* viii. 12, 1160, b, 32 sqq. c. 13, 1161, a, 22; cf. v. 10, 1134, b, 15; *Eud.* vii. 9, 1241, b, 29; *Polit.* i. 13, 1260, a, 9; *Œc.* i. 4, where details and practical directions are given upon this head. Cf. further, p. 222 sq. *infra.*

[2] Such passages as *Eth.* viii. 14, 1161, b, 26, ix. 7, 1168, a, 24, can hardly be regarded as relevant.

[3] *Eth. N.* viii. 12, 1160, b, 26, c. 13 *init.* (*Eud.* vii. 9, 1241, b, 28.)

father, being still only a part of his parent,[1] but the father has a duty to his child—the duty, namely, of providing for its highest interests.[2] The reason of this is that the child has a will and a virtue of its own, although both are imperfect. They are both perfect in his father, and we may therefore describe the right relation between father and son as one in which the former imparts his more perfect virtue to the latter, while the son by his obedience appropriates the virtue of his father.[3]

The position, lastly, of the Slave is one of complete dependence. To the institution of slavery Aristotle has devoted special attention, partly with the view of investigating its necessity and justice, and partly of laying down the proper method of treating slaves. That slavery is, in the first place, a necessity, follows, according to Aristotle, from the very nature of the household, whose requirements demand not only lifeless but also living and rational utensils. But utensils are the property of him who uses them. Hence to complete the accommodations of the household, human

[1] *Ibid.* v. 10, 1134, b, 8; cf. viii. 16, 1163, b, 18.

[2] *Polit.* iii. 6, 1278, b, 37.

[3] *Polit.* i. 13, 1260, a, 12, 31; cf. iii. 5, 1278, a, 4. A complete discussion of the family would include that of the fraternal bond, but upon this Aristotle does not enter in the *Politics*; only in the *Ethics* does he touch upon the relation existing between brothers, in treating of friendship. He remarks that brotherly love rests partly upon common parentage, which of itself constitutes a bond of union, and partly upon community of life and education; and that friendship between brothers resembles that between those of the same age, &c. He compares their relationship to a timocracy in so far as the parties in it are naturally upon an equality, and difference in age is the only ground of superiority; and ends by tracing the bond of connection between more distant relatives in a similar analysis; viii. 12–14, 1161, a, 3, 25, b, 30 sqq. 1162, a, 9 sqq.

beings are required who shall be the property of their master[1]—in other words, slaves.[2] That, in the second place, slavery is just, that it rests not upon legal enactments merely, as some even then affirmed,[3] but also upon the laws of nature, Aristotle tries to prove from the difference in the natural condition of men. Those who are by nature fitted only for physical employments justly come under the power of those who are capable of intellectual activity, since these are their superiors, just as the gods are the superiors of men or men of the beasts, and since generally the intellect must rule the body.[4] Aristotle even goes the length of affirming that nature has willed a physical distinction between them, and that it is only a *lusus naturæ* when the soul of a freeman finds its way into the body of a slave.[5] And since this in general is actually the relation of Barbarians to Greeks, the former are held to be the natural slaves of the latter.[6] Aristotle therefore regards

[1] *Polit.* i. 4; *Œc.* i. 5 *init.*

[2] A slave being (*Polit.* i. 4 *fin.*) *ὃς ἂν κτῆμα ᾖ ἄνθρωπος ὢν* (*κτῆμα δὲ ὄργανον πρακτικὸν* [see *ibid.* 1254, a, 1 sqq.] *καὶ χωριστόν*), a *φύσει δοῦλος* is *ὁ μὴ αὑτοῦ φύσει ἀλλ' ἄλλου, ἄνθρωπος δέ.*

[3] *Polit.* i. 3, 1253, b, 18 sqq. c. 6, 1255, a, 7; cf. *Ph. d. Gr.* i. 1007, 2, 4th edit.; ONCKEN, *Staatsl. d. Arist.* ii. 32 sq.

[4] *Ibid.* c. 5, 1254, b, 16, 34, vii. 3, 1325, a, 28. Plato had already expressed this idea; cf. *Ph. d. Gr.* i. 755, 2.

[5] *Polit.* i. 5, 1254, b, 27, where he adds: if one portion of the human race were physically as superior to the rest as the gods are represented to be, no one would refuse them unconditional submission. The remark is characteristic of a Greek. As in his view the spiritual character naturally and necessarily expresses itself in a harmonious external form, he finds in the acknowledged beauty of his own race a direct proof of its absolute superiority to barbarian peoples. How much more from this point of view would the slavery of black and coloured races have seemed to him to be justified.

[6] *Polit.* i. 2, 1252, b, 5, c. 6, 1255, a, 28; cf. vii. 7. Aristotle certainly admits exceptions to this assertion; Nature, he remarks, i. 6, 1255, b, 1, intends, indeed, that just as man springs

not only slavery itself as justifiable, but also war for the acquisition of slaves,[1] provided only the slavery be strictly limited to those who are by nature destined to it. It is unjust only when it is inflicted on those whom nature has destined to rule. The practice, accordingly, of treating prisoners of war indiscriminately as slaves, is condemned by Aristotle on the ground that captivity may overtake even the best and those who have been unjustly attacked.[2] The nature of the relation of master and slave must of course be ruled by these principles. A wife has a weak will and a boy an imperfect one, but a slave has none at all. His will resides in his master; obedience and usefulness in service are the only virtues which he is capable of exercising.[3] That the slave, being a man, must also possess a virtue proper to him as man is, indeed, admitted by Aristotle, but he immediately adds that the slave can only possess a minimum of this virtue.[4] Similarly he recommends a mild and humane treatment of slaves. He makes it the duty of the master to

from man, and beast from beast, so the good should spring from the good, but she does not always succeed in this. He continues: *ὅτι μὲν οὖν ἔχει τινὰ λόγον ἡ ἀμφισβήτησις* [the doubt about the lawfulness of slavery] *καὶ οὐκ εἰσὶν οἱ μὲν φύσει δοῦλοι οἱ δ' ἐλεύθεροι δῆλον*. This can only mean that all slaves or freemen are not so by nature, for he immediately adds: *καὶ ὅτι ἐν τισὶ διώρισται τὸ τοιοῦτον, ὧν συμφέρει τῷ μὲν τὸ δουλεύειν τῷ δὲ τὸ δεσπόζειν καὶ δίκαιον*. There must thus nevertheless be tribes born to be slaves, as is presupposed c. 2, *ibid.*, and must be assumed if war for the capture of slaves is to be justified. THUROT, *Études s. Arist.* 10, proposes instead of '*οὐκ εἰσὶν οἱ μὲν*,' '*οὐκ εἰσὶν εἰ μὴ*,' which, however, would yield the awkward meaning that all slaves are so by nature.

[1] *Polit.* i. 8, 1256, b. 23 sqq.

[2] *Ibid.* c. 6, 1255, a, 21 sqq.

[3] *Polit.* i. 13, 1259, a, 21 sqq. 1260, a, 12–24, 33; *Poet.* 15, 1454, a, 20.

[4] *Polit. ibid.*

educate them in the virtue that is possible to them;[1] he commends the practice of promisiug them freedom as the reward of good conduct.[2] And yet he holds that the power of the master as a whole is despotic, and that love on his part towards a slave is as impossible as love of the gods towards man.[3] That Aristotle holds this to be true of the slave *qua* slave and not *qua* man,[4] we can only regard as an inconsistency which does him honour. Greek morals and Greek ways of thought were too powerful within him to permit him to draw the more logical inference[5] that man *qua* man cannot be a slave.

To the investigation of slavery, Aristotle appends more general discussions upon property and modes of

[1] *Polit.* i. 7, c. 13, 1260, b, 3: φανερὸν τοίνυν ὅτι τῆς τοιαύτης ἀρετῆς αἴτιον εἶναι δεῖ τῷ δούλῳ τὸν δεσπότην . . διὸ λέγουσιν οὐ καλῶς οἱ λόγου τοὺς δούλους ἀποστεροῦντες καὶ φάσκοντες ἐπιτάξει χρῆσθαι μόνον· νουθετητέον γὰρ μᾶλλον τοὺς δούλους ἢ τοὺς παῖδας. On the treatment of slaves see further in *Œc.* i. 5.

[2] *Polit.* vii. 10 *fin.*, upon which HILDENBRAND. *Rechts- u. Staats-phil.* i. 400, pertinently remarks that this is inconsistent with Aristotle's principles: for he whom nature condemns to slavery ought not to be set free; he whom nature has not so condemned ought not to be held in slavery.

[3] *Eth.* viii. 12, 1160, b, 29, c. 13, 1160. a, 30 sqq.; cf. viii. 9 (see i. 3.8. n. 1, *supra*).

[4] *Eth.* viii. 13 *fin.*

[5] As RITTER (iii. 361) showed it to be, and as it continues to be, in spite of FECHNER's objection (*Gerechtigkeitsbegr. d. Arist.* p. 119) that according to Aristotle there are differences even within the sphere of human reason. Aristotle certainly assumes such differences and even asserts, as we have just seen, that they go so deep as to render a portion of mankind incapable of freedom. But the real question is whether this assertion still holds true if we are at the same time compelled to admit that even one who belongs to this portion of mankind is δυνάμενος κοινωνῆσαι νόμου καὶ συνθήκης, καὶ φιλίας δή, καθ' ὅσον ἄνθρωπος, and that there is a δίκαιον παντὶ ἀνθρώπῳ πρὸς πάντα. To a thing, a possession, no rights can belong. To a man who has no will and either no virtue at all or only that of a slave friendship, on Aristotle's principles, is impossible.

acquisition [1] somewhat loosely, with the remark that slaves being a part of a man's property, the subject of property here finds a natural place.[2] He distinguishes two kinds of production: 'natural,' and 'artificial.'[3] The former embraces all those modes of activity by which the necessities of life are obtained—the rearing of cattle, hunting, agriculture, &c.[4] From the barter of the products of these arises, in the first place, exchange, which is likewise regarded as a natural mode of production, since it immediately serves the satisfaction of natural wants.[5] But the introduction, for the sake of

[1] *Polit.* i. 8–11, cf. *Œc.* i. 6.

[2] See *Polit.* i. 8. Slaves had been previously described (c. 4 *init.*) as a part of κτῆσις, and κτητικὴ as a part of οἰκονομία; nevertheless one cannot accept TEICHMÜLLER's statement (p. 338 of the treatise cited 137, n. 2, *sup.*) that this section is here quite in place. For in c. 3 only the three relations of master and slave, husband and wife, father and children were adduced as the proper subjects of economics, and in 1253, b, 12, the theory of property is only touched upon in a few words: ἔστι δέ τι μέρος [? now also rejected by SUSEMIHL] ὃ δοκεῖ τοῖς μὲν εἶναι οἰκονομία, τοῖς δὲ μέγιστον μέρος αὐτῆς, viz. χρηματιστική, which is thus here regarded as merely supplementary to the study of economics. TEICHMÜLLER suggests that the remark in the text upon the way in which the theory of production is connected with the discussion of slavery, only betrays a confusion with regard to the meaning of external goods in Aristotle: but his ingenuity has here discovered a connection which is not to be found in Aristotle, and has no existence but in the commentator's own mind.

[3] c. 8 *fin.*: ὅτι μὲν τοίνυν ἔστι τις κτητικὴ κατὰ φύσιν τοῖς οἰκονόμοις καὶ τοῖς πολιτικοῖς, καὶ δι' ἣν αἰτίαν, δῆλον. c. 9 *init.*: ἔστι δὲ γένος ἄλλο κτητικῆς, ἣν μάλιστα καλοῦσι καὶ δίκαιον αὐτὸ καλεῖν χρηματιστικήν . . . . ἔστι δ' ἣ μὲν φύσει ἣ δ' οὐ φύσει αὐτῶν, ἀλλὰ δ' ἐμπειρίας τινὸς καὶ τέχνης γίνεται μᾶλλον.

[4] After enumerating the various kinds of natural production, and among them, strangely enough (1256, a, 36, b, 5), λῃστεία, which is neither natural to a moral being nor a productive activity at all, he says of them (1256, b, 26): ἓν μὲν οὖν εἶδος κτητικῆς κατὰ φύσιν τῆς οἰκονομικῆς μέρος ἐστὶν . . . . ὧν [a 'constructio ad sensum,' referring to the different activities comprehended under this class] ἐστὶ θησαυρισμὸς χρημάτων πρὸς ζωὴν ἀναγκαίων καὶ χρησίμων εἰς κοινωνίαν πόλεως ἢ οἰκίας.

[5] c. 9, 1257, a, 28, after the

commerce, of money as the universal standard of value[1] was followed by the development of artificial production, which has in view, not the requirements of life, but the possession of money.[2] Only the former of these kinds of production is an indispensable part of domestic economy.[3] It has to do with *real* wealth, which may be defined as the stock of household necessaries, and for this reason it is strictly limited by household needs.[4] Money-getting, on the other hand, is wholly unlimited, herein showing itself to be naturally bad and opposed to the true art of life, inasmuch as it serves, not to purify and exalt it, but only to provide the means of material existence and enjoyment.[5] Production as a whole is, accordingly, held by Aristotle in small esteem, and the more so, the more exclusively it is occupied with mere money-making business, since of all unnatural modes of production he believes money-lending to be the most unnatural of all.[6] He confines himself, accordingly, in what remains of this discussion, to a divi-

account of barter: *ἡ μὲν οὖν τοιαύτη μεταβλητικὴ οὔτε παρὰ φύσιν οὔτε χρηματιστικῆς ἐστὶν εἶδος οὐδέν· εἰς ἀναπλήρωσιν γὰρ τῆς κατὰ φύσιν αὐταρκείας ἦν.*

[1] See p. 173, *supra*.

[2] c. 9, 1257, a, 30 sqq.

[3] c. 9 *fin.*: *περὶ μὲν οὖν τῆς τε μὴ ἀναγκαίας χρηματιστικῆς . . . εἴρηται· καὶ περὶ τῆς ἀναγκαίας, ὅτι ἑτέρα μὲν αὐτῆς οἰκονομικὴ δὲ κατὰ φύσιν ἡ περὶ τὴν τροφήν.*

[4] c. 8, 1256, b, 30 (following the passage citèd p. 220, n. 4, *sup.*): *καὶ ἔοικεν ὅ γ' ἀληθινὸς πλοῦτος ἐκ τούτων εἶναι. ἡ γὰρ τῆς τοιαύτης κτήσεως αὐτάρκεια πρὸς ἀγαθὴν ζωὴν οὐκ ἄπειρός ἐστιν . . . . οὐδὲν γὰρ ὄργανον ἄπειρον οὐδεμιᾶς ἐστὶ τέχνης οὔτε πλήθει οὔτε μεγέθει, ὁ δὲ πλοῦτος ὀργάνων πλῆθός ἐστιν οἰκονομικῶν καὶ πολιτικῶν.*

[5] c. 9, 1257, b. 28–1258, a, 14.

[6] c. 10, 1258, a, 40: *τῆς δὲ μεταβλητικῆς ψεγομένης δικαίως (οὐ γὰρ κατὰ φύσιν ἀλλ' ἀπ' ἀλλήλων ἐστὶν), εὐλογώτατα μισεῖται ἡ ὀβολοστατικὴ διὰ τὸ ἀπ' αὐτοῦ τοῦ νομίσματος εἶναι τὴν κτῆσιν καὶ οὐκ ἐφ' ὅπερ ἐπορίσθη* [not from the proper use of gold]. *μεταβολῆς γὰρ ἐγένετο χάριν, ὁ δὲ τόκος αὐτὸ ποιεῖ πλέον . . . ὥστε καὶ μάλιστα παρὰ φύσιν οὗτος τῶν χρηματισμῶν ἐστίν.*

sion of it into its various kinds,[1] and to a few remarks upon the art of obtaining a monopoly of a commodity.[2] He places, however, a different estimate upon the scientific treatment of these matters and upon the conduct of them in actual practice.[3] Sharing as he does to the fullest extent the Greek contempt for manual labour,[4] he naturally assigns to the latter a lower place in proportion as it makes less claim upon the moral and intellectual qualities, consists more exclusively of physical occupations, and stamps the body more deeply with the marks of toil.[5]

Plato had demanded in his *Republic* that the family and household should be absorbed in the State. A community of wives, children, and goods had appeared to him to be the arrangement which was most desirable and alone suited to the perfect State. Aristotle rejects this view.[6] Plato desired that all things should be held

[1] He enumerates in c. 11 three kinds of χρηματιστική: (1) agriculture, cattle-rearing, &c.—οἰκειοτάτη χρηματιστική; (2) μεταβλητική, with its three branches, ἐμπορία, τοκισμὸς, μισθαρνία, the last of which includes all mechanical industries; (3) occupying an intermediate position — ὑλοτομία, μεταλλουργία, &c.

[2] He desires that a collection of these and similar artifices should be made (1259, a, 3), such as is actually attempted afterwards in the second book of the *Economics*. He adduces himself only two examples. As a rule, he refers to earlier writers upon husbandry, &c. (1258, b, 39). He will not himself linger over such subjects, as it is χρήσιμον μὲν πρὸς τὰς ἐργασίας, φορτικὸν δὲ τὸ ἐνδιατρίβειν.

[3] c. 11 *init*: πάντα δὲ τὰ τοιαῦτα τὴν μὲν θεωρίαν ἐλεύθερον ἔχει, τὴν δ' ἐμπειρίαν ἀναγκαίαν.

[4] Further proofs of this will meet us in the section upon the constitution of the State.

[5] *Ibid.* 1258, b, 35: εἰσὶ δὲ τεχνικώταται μὲν τῶν ἐργασιῶν ὅπου ἐλάχιστον τῆς τύχης, βαναυσόταται δ' ἐν αἷς τὰ σώματα λωβῶνται μάλιστα, δουλικώταται δὲ ὅπου τοῦ σώματος πλεῖσται χρήσεις, ἀγεννέσταται δὲ ὅπου ἐλάχιστον προσδεῖ ἀρετῆς. With the definition of τὸ βάναυσον cf. c 5, 1254, b, 24 sqq. PLATO, *Rep.* vi. 495 D (*Ph. d. Gr.* i. 754, 3).

[6] He expresses his views on

in common in order that the State might be the most perfect unity possible. But a State is not merely a unity; it is a whole composed of many and various parts. If perfect unity without multiplicity were the highest, then must the State shrink into the Household, and the Household into the Individual.[1] But even if we granted that unity is the best thing for a State, yet the arrangements which Plato proposes would not, he thinks, be the proper means for its attainment. Not to speak of the difficulties which such proposals would involve in their application,[2] Plato had said[3] that the unity of the State will be the most complete when all call the same thing *mine* and *thine*. But this assertion, as Aristotle acutely remarks, is ambiguous. If all could treat the same things as their own private property, unity might perhaps be thus promoted. That however, is not possible. If, on the other hand, children and goods are to be the common property of all, the desired result will not follow.[4] On the contrary, with the exclusiveness of these relationships, all their worth and all that gives them real significance would be destroyed: one who had the thousandth part of a claim upon each of a thousand sons, and was not even quite sure of that, would not

this subject, not in the first book, which treats of the family, but in the second, which treats of earlier ideal States. This discussion is, however, mentioned here out of its order for convenience of exposition.

[1] *Polit.* ii. 2, 1261, a, 9 sqq. (cf. c. 5, 1263, b, 29 sqq.) where, *inter alia*, he says: καίτοι φανερόν ἐστιν ὡς προϊοῦσα καὶ γινομένη μία μᾶλλον οὐδὲ πόλις ἔσται· πλῆθος γάρ τι τὴν φύσιν ἐστὶν ἡ πόλις . . . οὐ μόνον δ' ἐκ πλειόνων ἀνθρώπων ἐστὶν ἡ πόλις, ἀλλὰ καὶ ἐξ εἴδει διαφερόντων· οὐ γὰρ γίνεται πόλις ἐξ ὁμοίων. This is the basis, moreover, of the self-sufficiency of the State; *ibid.* b, 10 sqq.

[2] For a fuller discussion of which, see c. 3 sq. 1262, a, 14–40, b, 24 sqq.

[3] *Rep.* v. 462 c.

[4] c. 3, 1261, b, 16–32.

feel as a father towards any one.[1] The same is true of property. Here, also, so far from leading to unity, community of possession would be an inexhaustible source of strife.[2] What is required is the just distribution of property and the voluntary surrender of it to a common use.[3] Community of goods, on the other hand, along with the desire of private possession, destroys also the joy of benevolence and generosity; and just as community of women annihilates the virtue of temperance in the relations of the sexes, so community of goods renders impossible that virtue [4] which consists in the right attitude towards property.[5] In this opposition to the Platonic socialism we shall not only recognise Aristotle's practical sense, his clear insight into the laws and conditions of actual life, his aversion to all ethical onesidedness and his deep knowledge of human nature and of social life, but we shall not fail to observe that here, as in Plato, the political views are closely connected with the principles of the metaphysical system. Plato had demanded the abolition of all private possession and the suppression of all individual interests, because it is only in the Idea or Universal that he acknowledges any title to true reality.[6] Aristotle refuses to follow him here. To him the Individual is the primary reality,—

[1] *Ibid.* 1261, b, 32 sqq. c. 4, 1262, a, 40 sqq.

[2] c. 5, 1262, b, 37–1263, a, 27.

[3] *Ibid.* 1263, a, 21–40, where *fin.*: *φανερὸν τοίνυν ὅτι βέλτιον εἶναι μὲν ἰδίας τὰς κτήσεις τῇ δὲ χρήσει ποιεῖν κοινάς.* This is repeated vii. 10, 1329, b, 41.

[4] *i.e.*, *ἐλευθεριότης*, as to which, see *supra*.

[5] *Ibid.* 1263, a, 40–b, 14. The reproach with regard to *σωφροσύνη* is certainly unjust, for according to Plato, each has to refrain from all women who are not assigned to him by the government. The Platonic community of women is certainly not meant to be licence of desire (see the further discussion of this in ZELLER'S *Vortr. u. Abh.* i. 76).

[6] See *Ph. d. Gr.* i. p. 780.

and has the first claim to recognition. In his metaphysics individual things are regarded, not as the mere shadows of the idea, but as independent realities; universal conceptions not as independent substances, but as the expression for the common peculiarity of a number of individuals. Similarly in his moral philosophy he transfers the ultimate end of human action and social institutions from the State to the individual, and looks for its attainment in his free self-development. The highest aim of the State consists in the happiness of its citizens. The good of the whole rests upon the good of the individuals who compose it.[1] In like manner must the action by which it is to be attained proceed from the individual of his own free will. It is only from within through culture and education, and not by compulsory institutions, that the unity of the State can be secured.[2] In politics as in metaphysics

[1] Plato had met the objection (*Rep.* iv. 420 B sqq.) that he had failed to make his 'guardians' happy, with the remark that the question is of the happiness, not of a part, but of the whole; Aristotle replies (*Polit.* ii. 5, 1264, b, 17): ἀδύνατον δὲ εὐδαιμονεῖν ὅλην, μὴ τῶν πλείστων ἢ μὴ [we should omit this μὴ, or read εἰ μὴ instead of ἢ μὴ] πάντων μερῶν ἢ τινῶν ἐχόντων τὴν εὐδαιμονίαν. [Similarly, vii. 9, 1329, a, 23: εὐδαίμονα δὲ πόλιν οὐκ εἰς μέρος τι βλέψαντας δεῖ λέγειν αὐτῆς, ἀλλ' εἰς πάντας τοὺς πολίτας.] οὐ γὰρ τῶν αὐτῶν τὸ εὐδαιμονεῖν ὧνπερ τὸ ἄρτιον· τοῦτο γὰρ ἐνδέχεται τῷ ὅλῳ ὑπάρχειν τῶν δὲ μερῶν μηδετέρῳ, τὸ δὲ εὐδαιμονεῖν ἀδύνατον. In these remarks we have only the other side of the truth; nor is it any solution of the difficulty here raised to represent the life of the guardians, as Plato himself does in a subsequent passage (*Rep.* v. 465 E), as the happiest. Plato in principle denies what Aristotle asserts, viz. that the happiness of the individuals as such must be the test and criterion of all political institutions; and for that very reason he in the same passage demands that the individuals should seek their highest happiness in unselfish devotion.

[2] *Polit.* ii. 5, 1263, b, 36: the true nature of the State must not be sacrificed to an exaggerated conception of unity (see p. 223, n. 1, *sup.*); ἀλλὰ δεῖ πλῆθος ὂν . . . διὰ

the central point with Plato is the Universal, with Aristotle the Individual. The former demands that the whole should realise its ends without regard to the interests of individuals: the latter that it be reared upon the satisfaction of all individual interests that have a true title to be regarded.

These remarks form a natural introduction to the discussion of the various forms of political constitution. To this, after criticising earlier political sketches and theories,[1] Aristotle applies himself in the third book of the *Politics*. The link which we should look for between the family and the State, viz. the conception of 'Society,' was not yet an object of inquiry. A science of Sociology belongs to modern, indeed to quite recent times. Even the idea of 'the community,' to which there then existed nearer analogies, is not a special subject of discussion. To Aristotle as a Greek the State is coincident with the City; the community, therefore, so far as it is different from the State, can only be the Village; this, however, is a merely transitional form which is lost in the City or Nation so soon as a comprehensive social union takes

*τὴν παιδείαν κοινὴν καὶ μίαν ποιεῖν* [sc *τὴν πόλιν*]· *καὶ τόν γε μέλλοντα παιδείαν εἰσάγειν, καὶ νομίζοντα διὰ ταύτης ἔσεσθαι τὴν πόλιν σπουδαίαν, ἄτοπον τοῖς τοιούτοις* [community of women and goods] *οἴεσθαι διορθοῦν, ἀλλὰ μὴ τοῖς ἔθεσι καὶ τῇ φιλοσοφίᾳ καὶ τοῖς νόμοις.*

[1] One cannot here enter into the details of this criticism as they are to be found in the second book of the *Politics*. After a lively polemic (c. 1–5) against the community of women, children, and goods, and other proposals of the *Republic*, Aristotle proceeds to discuss (c. 6) PLATO'S *Laws* [on these and other assertions with regard to Plato's political philosophy see ZELLER, *Platon. Stud.* 288 sqq. 203–207]; the proposals of Phaleas and Hippodamus (c. 7 sq.); the Spartan (c. 9), the Cretan (c. 10), and the Carthaginian (c. 11) constitutions; and, finally (c. 12: see, however, *Ph. d. Gr.* i. 676), the laws of Solon, Zaleucus, Charondas, and other ancient legislators.

the place of mere local association limited to the needs of trade.[1]

But the particular institutions by means of which this social union has to realise its end, and the forms which it must take, will depend essentially upon the character of the individuals whom it includes. It is with these, therefore, that Aristotle next deals.

### 3. *The State and the Citizens*

The State is the composite whole, and the constituent parts of it—the subjects whose relations to one another are determined by the character of the constitution—are the citizens.[2] What, then, constitutes a citizen or citizenship? One can live in a city without being a citizen of it. Foreigners may even be admitted to its courts of law. On the other hand, it is not necessary that the citizen should be born of citizen parents, for in that case neither the first founders of a State nor those who at any time have the franchise conferred on them would be citizens.[3] A citizen in the proper sense of the word is one who is entitled to take part in the government of the State and in the administration of justice. A State is an aggregate of such persons, which must be sufficient of itself to satisfy all the demands of their common life.[4] It is true that as the essence of a thing consists

[1] See p. 208, n. 1, *supra*.

[2] *Polit.* iii. 1, 1274, b, 36 sqq.: the *πολιτεία* is *τῶν τὴν πόλιν οἰκούντων τάξις τις*; the *πόλις*, on the other hand, is a composite whole consisting of many parts—*πολιτῶν τι πλῆθος*.

[3] *Polit.* iii. 1 sq. 1275, a, 7 sqq. b, 21 sqq.

[4] *Ibid.* c. 1, 1275, a, 22: *πολίτης δ' ἁπλῶς οὐδὲν τῶν ἄλλων ὁρίζεται μᾶλλον ἢ τῷ μετέχειν κρίσεως καὶ ἀρχῆς* (similarly, c. 13, 1283, b, 42). After some further

in general not in its matter but in its form, the essence of the State must be sought for in its form or constitution. A State remains the same so long as its constitution remains unaltered, even although the individuals who are the People should change; on the other hand, the State changes when its constitution is changed, even although the citizens remain the same.[1] Yet it is equally true that the constitution has to adapt itself to the character and condition of the men for whom it is designed. The members of the State are not equal to one another in every respect, but neither are they unequal in every respect.[2] Now all constitutional law is concerned with the distribution of political rights and benefits. An equal distribution is just only on condition that the persons amongst whom they are distributed are themselves equal to one another. If, on

explanations, in the course of which it is pointed out that under *ἀρχὴ* we must include the business of the popular assembly, Aristotle concludes, *ibid.* b, 18: *ᾧ γὰρ ἐξουσία κοινωνεῖν ἀρχῆς βουλευτικῆς ἢ κριτικῆς, πολίτην ἤδη λέγομεν εἶναι ταύτης τῆς πόλεως, πόλιν δὲ τὸ τῶν τοιούτων πλῆθος ἱκανὸν πρὸς αὐτάρκειαν ζωῆς.* With the last clause, cf. p. 208, nn. 1 and 2.

[1] c. 3, 1276, a, 34: How long may the *πόλις* be said to be one and the same? So long, it might be answered, as it is inhabited by the same race. But this is wrong: *εἴπερ γάρ ἐστι κοινωνία τις ἡ πόλις, ἔστι δὲ κοινωνία πολιτῶν, πολιτείας γιγνομένης ἑτέρας τῷ εἴδει καὶ διαφερούσης τῆς πολιτείας ἀναγκαῖον εἶναι δόξειεν ἂν καὶ τὴν πόλιν εἶναι μὴ τὴν αὐτήν . . . . μάλιστα λεκτέον τὴν αὐτὴν πόλιν εἰς τὴν πολιτείαν βλέποντας ὄνομα δὲ καλεῖν ἕτερον ἢ ταὐτὸν ἔξεστι καὶ τῶν αὐτῶν κατοικούντων αὐτὴν καὶ πάμπαν ἑτέρων ἀνθρώπων.* By *πολιτεία*, however, we must here understand, not merely the constitution in the narrower sense, but the whole social organisation.

[2] Cf. on the one hand p. 223, n. 1, and on the other *Pol.* iv. 11, 1295, b, 25: *βούλεται δέ γε ἡ πόλις ἐξ ἴσων εἶναι καὶ ὁμοίων ὅτι μάλιστα*, for only between such is *φιλία* and *κοινωνία πολιτικὴ* possible. Cf. vii. 8, 1328, a, 35. The citizens, as we shall find, will be equal in freedom, in common political rights and to a certain degree also in common social virtue; they will be unlike in property, avocation, descent, and individual capacity.

the other hand, the persons are unequal, justice requires an unequal distribution. In order, therefore, rightly to judge of the character of State institutions, we must know wherein consists this equality and inequality with which the State has to deal.[1]

Of essential importance in this regard are, first of all, the occupations and manner of life of the citizens.[2] Parallel to the distinction which we noted in the Household between freemen and slaves, we have among citizens themselves those who are exempt from menial labour, and those who have to devote themselves to it. One who performs menial offices for an individual is a slave: one who does so for the community is a day-labourer (*θὴς*) or artisan (*βάναυσος*).[3] The importance of this distinction appears from the statement[4] that the rights of citizenship belong to persons of this class only in imperfect States, but not in the best. The object of the latter is the happiness of the entire people; and so, as happiness is only attainable through virtue, no one who is incapable of true virtue can be a citizen in a State of which virtue is at once the basis and the end.

[1] *Polit.* iii. 9 *init.*: Both oligarchy and democracy rest upon right: but neither upon perfect right. οἷον δοκεῖ ἴσον τὸ δίκαιον εἶναι, καὶ ἔστιν, ἀλλ' οὐ πᾶσιν ἀλλὰ τοῖς ἴσοις. καὶ τὸ ἄνισον δοκεῖ δίκαιον εἶναι· καὶ γάρ ἐστιν, ἀλλ' οὐ πᾶσιν ἀλλὰ τοῖς ἀνίσοις. c. 12, 1282, b, 16: ἔστι δὲ πολιτικὸν ἀγαθὸν τὸ δίκαιον, τοῦτο δ' ἐστὶ τὸ κοινῇ συμφέρον, δοκεῖ δὲ πᾶσιν ἴσον τι τὸ δίκαιον εἶναι, as is explained in the ethical discussions (see p. 171, *supra*). τὶ γὰρ καὶ τισὶ τὸ δίκαιον, καὶ δεῖν τοῖς ἴσοις ἴσον εἶναί φασιν. ποίων δ' ἰσότης ἐστὶ καὶ ποίων ἀνισότης, δεῖ μὴ λανθάνειν· ἔχει γὰρ τοῦτ' ἀπορίαν καὶ φιλοσοφίαν πολιτικήν. c. 13, 1283, a, 26 sqq.

[2] *Polit.* iii, 5, vii. 9.

[3] iii. 5, 1278, a, 11.

[4] iii. 5, 1278, a, 15 sqq. vii. 9, 1328, b, 27 sqq. 1329, a, 19 sqq. On this conception, which will often meet us again, especially in treating of the best State, see further viii. 2, 1337, b, 8 sqq. c. 4, 1338, b, 33, c. 5, 1339, b, 9, c. 6, 1340, b, 40, 1341, a, 5, b, 14.

Birth and property are two further important points for consideration. While freemen as such are all equal, the nobly born claim to have inherited higher ability and rank from their ancestors; the rich, on the other hand, demand a greater share in the government, on the ground that the greater part of the national property is in their hands, and that propertied men in all matters of business are more reliable than unpropertied. Aristotle does not, indeed, admit these claims unconditionally, but he does not regard them as wholly unjustified, for although political privileges cannot be claimed on the ground of each and every superiority, but only of such as are of political importance, yet it cannot be denied that the advantages in question are 'political.' [1] Thus while in speaking of property distinctions he rejects the oligarchical demand for a plutocracy with the pertinent observation that it would be justifiable only on the supposition that the State is nothing but a mercantile company,[2] yet he cannot conceal from himself that distinctions of wealth are of the highest significance for the State. Riches and poverty both involve many kinds of moral evil: the rich commit outrage through arrogance, the poor through dishonesty; the former know neither how to obey nor how to rule over freemen, the latter neither how to rule nor how to obey as freemen; and where a State has fallen asunder into rich and poor, it has lost the inner bond of its communal life, in the equality, unanimity, and social sympathy of the citizens. The well-to-do middle class, being the mean, is the best: it

[1] iii. 12 sq. 1282, b, 21–1283, a, 37. [2] iii. 9, 1280, a, 22 sqq.

is best secured against excesses of its own and attacks of an enemy; it is the least anxious to put itself forward in political life; when the centre of gravity lies in it we have the most orderly and enduring form of government.[1] Whosoever would give stability to his political institutions must secure the support of this class, seeing that it holds the balance between the two contending parties of the rich and the poor.[2] More important still, however, is the political capacity of the citizens. The essential aim of the State is the happiness and moral perfection of the citizens; he who is able to contribute most to this will have the best claim to influence in the State. But that which more than any other quality fits a man to do so is virtue, especially justice and military ability, since, while the latter is indispensable for the preservation of the State, the former is that which lies at the foundation of all society and involves all other virtues.[3] There are thus different principles upon which political rights may be apportioned.[4] According as one or other of these is adopted,

[1] iv. 11, 1295, b, 1—1296, a, 21, where it is further shown that great cities are more exempt from disquiet than small ones, because they have a more numerous middle class; that democracies are more stable than oligarchies, because the middle class finds itself more at home in them—only, however, on condition that it does so—and that the best lawgivers, *e.g.* Solon, Lycurgus, Charondas, have belonged to the middle class.

[2] iv. 12, 1296, a, 34 sqq.

[3] iii. 9, 1281, a, 2 sqq. c. 12 sq. 1283, a, 19–26, 37.

[4] The character and geographical position of the country, and similar external circumstances might also be here adduced. To the political importance of these, as may be seen from *Polit.* vii. 6, c. 11, 1330, b, 17, vi. 7, 1321, a, 8 sqq., Aristotle was keenly alive. He admits that a maritime situation favours the rise of a numerous nautical population and thereby promotes democratic institutions. He remarks that an acropolis is favourable to monarchy and oligarchy, a flat country to democracy, a number of fastnesses

or as several of them are combined in a definite manner, will be the character of the resulting constitution. For while the differences in the general character of States depend upon the view taken of their end and of the means by which it is pursued,[1] the differences in the particular form of their constitution depend upon the share assigned to the different classes of the citizens in the public benefits and in the activities by which these are acquired.[2] The decisive question here, however, is:

to aristocracy; that where horse-breeding succeeds, and cavalry is therefore the chief military weapon, oligarchies are easily formed, &c. At the same time he suggests means (*ibid.*) to counteract such results, and as these circumstances do not in any case affect the form of constitution immediately, but only through the character of the people as that is determined by them, he leaves them out of account in the present investigation.

[1] vii. 8, 1328, a, 35: *ἡ δὲ πόλις κοινωνία τίς ἐστι τῶν ὁμοίων, ἕνεκεν δὲ ζωῆς τῆς ἐνδεχομένης ἀρίστης. ἐπεὶ δ' ἐστὶν εὐδαιμονία τὸ ἄριστον, αὕτη δὲ ἀρετῆς ἐνέργεια καὶ χρῆσίς τις τέλειος, συμβέβηκε δὲ οὕτως ὥστε τοὺς μὲν ἐνδέχεσθαι μετέχειν αὐτῆς, τοὺς δὲ μικρὸν ἢ μηδὲν, δῆλον ὡς τοῦτ' αἴτιον τοῦ γίγνεσθαι πόλεως εἴδη καὶ διαφορὰς καὶ πολιτείας πλείους· ἄλλον γὰρ τρόπον καὶ δι' ἄλλων ἕκαστοί τοῦτο θηρεύοντες τούς τε βίους ἑτέρους ποιοῦνται καὶ τὰς πολιτείας.*

[2] After enumerating the forms of activity which are indispensable to the existence of society, and the corresponding classes of citizens (farmers, artisans, soldiers, proprietors, priests, judges and administrators) Aristotle proceeds *ibid.* c. 9 *init.*: *διωρισμένων δὲ τούτων λοιπὸν σκέψασθαι πότερον πᾶσι κοινωνητέον πάντων τούτων . . . ἢ καθ ἕκαστον ἔργον τῶν εἰρημένων ἄλλους ὑποθετέον, ἢ τὰ μὲν ἴδια τὰ δὲ κοινὰ τούτων ἐξ ἀνάγκης ἐστίν.* (Cf. ii. 1, 1260, b, 37.) *ταῦτα γὰρ καὶ ποιεῖ τὰς πολιτείας ἑτέρας· ἐν μὲν γὰρ ταῖς δημοκρατίαις μετέχουσι πάντες πάντων, ἐν δὲ ταῖς ὀλιγαρχίαις τοὐναντίον.* Similarly, and with express reference to this passage, iv. 3, 1289, a, 27 sqq.: *τοῦ μὲν οὖν εἶναι πλείους πολιτείας αἴτιον ὅτι πάσης ἐστὶ μέρη πλείω πόλεως τὸν ἀριθμόν.* A State consists of an aggregation of households, of people of large, small and average means, of warlike and unwarlike, of farmers, merchants and artisans; further, there are differences of birth and capacity (*ἀρετή*). Of these classes sometimes fewer, sometimes more, sometimes all, share in the government (*πολιτεία*). *Φανερὸν τοίνυν ὅτι πλείους ἀναγκαῖον εἶναι πολιτείας εἴδει διαφερούσας ἀλλήλων· καὶ γὰρ ταῦτ' εἴδει διαφέρει τὰ μέρη σφῶν αὐτῶν. πολιτεία μὲν*

Who possesses the supreme power—who is *sovereign*?[1] The different possible ways of adjusting the relations of the various classes to one another are therefore enumerated by Aristotle with a view to preparing the way for an investigation into the comparative value of particular forms of constitution, the conditions of their rise and continuance, and the institutions which correspond to them.

### 4. *Forms of Constitution*

We are accustomed to understand by the term 'Constitution' only the general form of government of a particular State—the sum of the arrangements which regulate the distribution within it of political functions.[2]

γὰρ ἡ τῶν ἀρχῶν τάξις ἐστὶ, ταύτην δὲ διανέμονται πάντες ἢ κατὰ τὴν δύναμιν τῶν μετεχόντων ἢ κατά τιν' αὐτῶν ἰσότητα κοινήν . . . ἀναγκαῖον ἄρα πολιτείας εἶναι τοσαύτας ὅσαιπερ τάξεις κατὰ τὰς ὑπεροχάς εἰσι καὶ κατὰ τὰς διαφορὰς τῶν μορίων. With the same view of explaining the different forms of constitution, the different classes in a community are then again enumerated (c. 4, 1290, b, 21 sqq.) as follows: farmers, artisans, traders, day-labourers, soldiers, rich (εὔποροι) who serve the state with their money, magistrates, judges, and members of the supreme administration. (In this enumeration, the words ἕβδομον and ὄγδοον, 1291, a, 33 sq., cause a difficulty, to avoid which NICKES, *De Arist. Polit. libr.* 110, proposes to read ἕκτον and ἕβδομον, while SUSEMIHL, *in loco*, with CONRING, supposes a lacuna before ἕβδομον, in which he supposes the sixth class was mentioned.)

[1] iii. 6 *init.*: We must ask how many and what constitutions there are? ἔστι δὲ πολιτεία πόλεως τάξις τῶν τε ἄλλων ἀρχῶν καὶ μάλιστα τῆς κυρίας πάντων. κύριον μὲν γὰρ πανταχοῦ τὸ πολίτευμα τῆς πόλεως, πολίτευμα δ' ἐστὶν ἡ πολιτεία. (Cf. c. 7, 1279, a, 25.) In democracies the people is sovereign (κύριος); in oligarchies only a minority of the people: hence the difference in these forms of constitution.

[2] This is at least the scientific conception of the constitution; the written documents which define the constitution certainly neither contain all that according to this conception is included under it, nor do they confine themselves to it, but generally they contain all those laws which, as fundamental to the State, seem to require special sanction.

Aristotle meant far more by it. He comprehends under the corresponding word 'Polity,' not only all this, but also the substantial character of the community in question, as that expresses itself in the accepted theory of the State and in the spirit of its government.[1] He has thus the advantage of exhibiting more clearly than is commonly done by modern writers the connection of the political institutions of a people with its life as a whole, and is less exposed to the danger of treating these as something independent and equally applicable to all communities. Here as elsewhere in the *Politics* the leading characteristic of his method is the care he takes scientifically to trace everything back to its real source, and to find the principle of its explanation in its own peculiar nature. On the other hand, it cannot be denied that the treatment of political constitutions suffers in simplicity when it does not confine itself to deducing them as the forms of an organised civil life from the spirit and mutual relations of the citizens, but mixes itself up with the discussion of the legal details of that life itself. Aristotle is not free from this confusion,[2]

[1] As is obvious, *inter alia*, from p. 232, n. 1, with which cf. p. 232, n. 2, and p. 233, n. 1, *supra*.

[2] Besides the passage just referred to above, see esp. *Polit.* iv. 1, 1289, a, 13: πρὸς γὰρ τὰς πολιτείας τοὺς νόμους δεῖ τίθεσθαι καὶ τίθενται πάντες, ἀλλ' οὐ τὰς πολιτείας πρὸς τοὺς νόμους. πολιτεία μὲν γάρ ἐστι τάξις ταῖς πόλεσιν ἡ περὶ τὰς ἀρχάς, τίνα τρόπον νενέμηνται, καὶ τί τὸ κύριον τῆς πολιτείας καὶ τί τὸ τέλος ἑκάστης τῆς κοινωνίας ἐστίν· νόμοι δὲ κεχωρισμένοι τῶν δηλούντων τὴν πολιτείαν, καθ' οὓς δεῖ τοὺς ἄρχοντας ἄρχειν καὶ φυλάττειν τοὺς παραβαίνοντας αὐτούς. So also vii. 13 *init.*, and throughout the whole discussion of the different forms of constitution, the question as to the nature of the πολιτεία is taken to involve that of the ultimate aim of the State, and the investigation into the ἀρίστη πολιτεία (see *infra*) is more concerned with the laws upon education and the like than with questions properly constitutional in our sense.

although in general he has clearly distinguished between questions of law and constitution.[1]

In investigating political constitutions Aristotle complains[2] that previous writers had contented themselves with representing an ideal State, or else with eulogising the Spartan or some other historical constitution. Aristotle himself aims at a more exhaustive treatment of his subject. Political science cannot, he says, any more than any other, limit itself to the description of an ideal. It must also show what form of State is the best attainable under certain given circumstances; it must further take account of actually existing constitutions and of the conditions of their rise and maintenance; and it must be able, finally, to declare what institutions are best adapted for the majority of States.[3] The description of the political ideal must

[1] See preced. n. and *Polit.* ii. 6, 1265, a, 1; *Eth.* x. 10, 1181, b, 12: as his predecessors have not (sufficiently) investigated the question of legislation, he will himself treat generally of this as well as of the State (πολιτεία). L. 21: ποία πολιτεία ἀρίστη, καὶ πῶς ἑκάστη ταχθεῖσα, καὶ τίσι νόμοις καὶ ἔθεσι χρωμένη.

[2] *Polit.* iv. 1, 1288, b, 33 sqq. This complaint, however, is not altogether just in respect of Plato, who not only in the *Laws* had placed a second State beside his ideal republic. but in the *Rep.* itself had fully discussed the imperfect forms of constitution. It is true, however, that none of these investigations satisfies Aristotle's requirements.

[3] *Polit.* iv. 1. Aristotle here sets before Politics a fourfold problem: (1) πολιτείαν τὴν ἀρίστην θεωρῆσαι τίς ἐστι καὶ ποία τις ἂν οὖσα μάλιστ' εἴη κατ' εὐχὴν, μηδενὸς ἐμποδίζοντος τῶν ἐκτός; (2) besides the ἁπλῶς κρατίστη to discuss also τὴν ἐκ τῶν ὑποκειμένων ἀρίστην; similarly (3), τὴν ἐξ ὑποθέσεως, and (4) τὴν μάλιστα πάσαις ταῖς πόλεσιν ἁρμόττουσαν (on which see c. 11 *init.*). Of these four questions the third has not infrequently been very strangely misunderstood, *e.g.* by BARTHÉLEMY ST-HILAIRE, but also by GÖTTLING *in loco.* Aristotle himself, however, states (1288, b, 28) his meaning quite unambiguously. ἔτι δὲ τρίτην, he says, τὴν ἐξ ὑποθέσεως· δεῖ γὰρ καὶ τὴν δοθεῖσαν δύνασθαι θεωρεῖν, ἐξ ἀρχῆς τε πῶς ἂν γένοιτο, καὶ γενομένη τίνα τρόπον ἂν σώζοιτο

therefore be supplemented by a comprehensive survey of actual facts. Aristotle does not renounce such an ideal, but desires at the same time to investigate all other possible forms of State, the conditions under which they naturally rise, the laws which they adopt, and the institutions by which they are maintained. He examines States with the keen sense of the scientific investigator, who pays equal regard to the small and the great, to the normal and the abnormal, as well as with the practical eye of the statesman, who desires to do justice to the actual circumstances and adapt his ideal to the given conditions.[1] He possesses, moreover,

πλεῖστον χρόνον· λέγω δ' οἷον εἴ τινι πόλει συμβέβηκε μήτε τὴν ἀρίστην πολιτεύεσθαι πολιτείαν ἀχορήγητόν τε εἶναι καὶ τῶν ἀναγκαίων [the necessary requisites for the best], μήτε τὴν ἐνδεχομένην ἐκ τῶν ὑπαρχόντων, ἀλλά τινα φαυλοτέραν. (Cf. iv. 11, 1296, b, 9: λέγω δὲ τὸ πρὸς ὑπόθεσιν, ὅτι πολλάκις οὔσης ἄλλης πολιτείας αἱρετωτέρας ἐνίοις οὐθὲν κωλύσει συμφέρειν ἑτέραν μᾶλλον εἶναι πολιτείαν; also v. 11, 1314, a, 38.) The πολιτεία ἐξ ὑποθέσεως is, according to this statement, identical with ἡ δοθεῖσα πολιτεία, ὑπόθεσις indicating the given case, the particular circumstances that are actually present, and having, therefore, essentially the same meaning as on p. 247, n. 2, and *Ph. d. Gr.* i. 1015 *med.*, where it is distinguished from θέσις. With the above passage PLAT. *Laws*, v. 739, A sqq., has been compared. The resemblance, however, is a remote one; for (1) Plato speaks not of four but only of three States to be depicted; (2) he enters into no details with reference to the third of these (the first is that of the *Rep.*, the second that of the *Laws*), but he can hardly have been thinking of actually existing States; (3) even the second State, that of the *Laws*, does not correspond with Aristotle's πολιτεία ἐκ τῶν ὑποκειμένων ἀρίστη, for Plato does not show in this work what is the best that can be evolved from existing circumstances, but, just as in the *Rep.*, sketches the outline of an ideal State, which only differs from that in the *Rep.* in bearing a closer resemblance to reality. Still less can the State in the *Laws* be identified with Aristotle's πολιτεία ἐξ ὑποθέσεως ἀρίστη, nor would Grote have done so (*Plato*, iii. 357 sq.) had he not wrongly explained ὑπόθεσις to mean an 'assumed principle.'

[1] See his complaint against his predecessors, *ibid.* 1288, b, 35: ὡς οἱ πλεῖστοι τῶν ἀποφαινομένων περὶ πολιτείας, καὶ εἰ τἆλλα

the philosophic spirit, which traces political institutions back to their inner sources, looks past individual facts to universal conceptions, and while engaged in the investigation of existing realities keeps an eye steadily fixed on the ideal. It is just this combination of dissimilar and rarely united qualities that makes Aristotle's political philosophy so unique and unrivalled in its kind.

Two points of view have emerged in the preceding discussion, from which we may distinguish and estimate the different forms of political constitution—viz. the recognised aim of government, and the distribution of political power. In the former respect the contrast is between those States in which the common good and those in which the advantage of the rulers is pursued as the highest end.[1] In treating, on the other hand, of the distribution of political power, Aristotle retains at first the customary arithmetical division of States according as they are governed by one, by some, or by all of the citizens. Combining these two principles, he enumerates six forms of constitution, three of which are good and three bad, setting down all those as unjust and despotic in which the aim is not the common good, but the advantage of the rulers.[2] Where the

λέγουσι καλῶς, τῶν γε χρησίμων διαμαρτάνουσιν.

[1] iii. 6. 1278, a, 30 sqq.: As in the household the government of the slaves aims at securing in the first instance the advantage of the master, and only secondarily that of the slaves as a means to the former, and as the government of the family, on the other hand, aims primarily at the good of the governed, but in a secondary way also at that of the head of the house in so far as he is himself a member of the family—so in the State we must distinguish the two above-mentioned kinds of government.

[2] iii. 6 *fin.*: φανερὸν τοίνυν ὡς ὅσαι μὲν πολιτεῖαι τὸ κοινῇ συμφέρον

administration has for its object the common good, if one is the sovereign, we have a monarchy; if a minority, an aristocracy; if the whole body of the citizens, a polity; where it has for its object the advantage of the sovereign, monarchy degenerates into tyranny, aristocracy into oligarchy, polity into democracy.[1] This

σκοποῦσιν, αὗται μὲν ὀρθαὶ τυγχάνουσιν οὖσαι κατὰ τὸ ἁπλῶς δίκαιον, ὅσαι δὲ τὸ σφέτερον μόνον τῶν ἀρχόντων, ἡμαρτημέναι πᾶσαι καὶ παρεκβάσεις τῶν ὀρθῶν πολιτειῶν· δεσποτικαὶ γάρ, ἡ δὲ πόλις κοινωνία τῶν ἐλευθέρων ἐστίν. Hence iii 17 *init.*: ἔστι γάρ τι φύσει δεσποστὸν καὶ ἄλλο βασιλευτὸν καὶ ἄλλο πολιτικὸν καὶ δίκαιον καὶ συμφέρον· τυραννικὸν δ' οὐκ ἔστι κατὰ φύσιν, οὐδὲ τῶν ἄλλων πολιτειῶν ὅσαι παρεκβάσεις εἰσίν· ταῦτα γὰρ γίγνεται παρὰ φύσιν.

[1] *Polit.* iii. 7, iv. 2, 1289, a, 26, b, 9; *Eth.* viii. 12. Aristotle's account is here essentially that of Plato in the *Politicus* (cf. *Ph. d. Gr.* i. p. 784), of which he himself, *Polit.* iv. 2, 1289, b, 5, reminds us, while at the same time he differs from it in a single respect. There is, indeed, between the *Ethics* and the *Politics* this divergency, that while in the latter the third of the three true forms of constitution is called simply 'polity,' it is said in the *Ethics*: τρίτη δ' ἡ ἀπὸ τιμημάτων, ἣν τιμοκρατικὴν λέγειν οἰκεῖον φαίνεται, πολιτείαν δ' αὐτὴν εἰώθασιν οἱ πλεῖστοι καλεῖν. This discrepancy, however, is not so important that we may infer from it a change in Aristotle's political views, or that to permit time for its occurrence we may place the *Ethics* on this ground considerably earlier than the *Politics*. For as a matter of fact the latter also describes its polity as a timocracy (see *Ph. d. Gr.* i. p. 745 sq.), so that the difference resolves itself finally into this: that in the *Ethics*, *brevitatis causa*, Aristotle calls it timocracy, whereas in the *Politics* he appropriates to it the common term πολιτεία, as he has room here to describe more accurately what he means by it. ISOCR. *Panath.* 131, has been taken to refer to the passage just cited from the *Ethics* (ONCKEN, *Staatsl. d. Arist.* ii. 160), and the conclusion drawn that the *Ethics* cannot have been composed later than ann. 342–339 B.C. (HENKEL, *Stud. zür Gesch. d. griech. Lehre vom Staat*, 46; Oncken takes another view). But it seems more probable that the passage refers to Plato, who in the *Politicus* (302 D sq.) adduces legal democracy, and in the *Republic* (viii. 545 B, C) timocracy, as peculiar forms of constitution; for Isocrates does not say that the writer upon whom his attack is made identifies these two (as Aristotle does). If, however, we are to find here a reference to the *followers* of Plato as well, and especially to Aristotle, it would probably be better to suppose that the rhetorician has in view one of his dia-

principle of arrangement, however, is not consistently preserved throughout; for while it might appear from the above statement that aristocracy and polity differ from monarchy only in the number of the rulers, we learn in another passage that this itself depends upon the character of the people. So the government by one is natural where in a people one family has a pre-eminent faculty for government; aristocracy, where a community of free citizens is content to submit to the government of the fittest; polity, where the population is a military one which, having distributed the offices of State among the propertied classes according to the standard of merit, knows both how to command and how to obey.[1] Referring further to the distinction between democracy and oligarchy, Aristotle criticises those who look for it in the fact that in the former the whole body, in the latter a minority, of the citizens hold the sovereignty. This numerical distinction, he holds, is merely accidental and derivative: the essential opposition of these two forms of constitution consists in the fact that in the one the rich, in the other the poor, bear rule.[2] In like manner that polity which stands between them is distinguished by the preponderance of the middle class.[3] Elsewhere he finds the characteristic

logues (such as that mentioned in *Polit.* iii 6; see i. p. 119, n. 1, *supra*). That the *Ethics* cannot have been composed so early as Henkel believes, has already been shown, i. p. 154 sq.

[1] iii. 17, 1288, a, 1: *βασιλευτὸν μὲν οὖν τὸ τοιοῦτόν ἐστι πλῆθος ὃ πέφυκε φέρειν γένος ὑπερέχον κατ' ἀρετὴν πρὸς ἡγεμονίας πολιτικήν. ἀριστοκρατικὸν δὲ πλῆθος ὃ πέφυκε φέρειν πλῆθος ἄρχεσθαι δυνάμενον τὴν τῶν ἐλευθέρων ἀρχὴν ὑπὸ τῶν κατ' ἀρετὴν ἡγεμονικῶν πρὸς πολιτικὴν ἀρχήν, πολιτικὸν δὲ πλῆθος ἐν ᾧ πέφυκεν ἐγγίνεσθαι πλῆθος πολεμικόν, δυνάμενον ἄρχεσθαι καὶ ἄρχειν κατὰ νόμον τὸν κατ' ἀξίαν διανέμοντα τοῖς εὐπόροις τὰς ἀρχάς.*

[2] *Polit.* iii. 8, cf. c. 7 *fin.* iv. 11, 12, 1296, a, 1, b, 24 sqq.

[3] iv. 12, 1296, b, 38.

peculiarity of democracy in freedom and equality, in the fact that all free men have an equal share in the government; and then combining this principle with the two others, he says that in democracy the majority of the poor and the free, in oligarchy conversely the minority of the rich and the noble, are the rulers;[1] for since in a State where all are equal the majority of votes decides, and the poor always form a majority, these have necessarily the power in their own hands.[2] Following up the same line of thought, he indicates virtue, wealth, and freedom as severally characteristic of different forms of constitution: virtue of aristocracy, wealth of oligarchy, freedom of democracy.[3] In a third

[1] iv. 4, where it is first said (1290, b, 1): *δῆμος μέν ἐστιν ὅταν οἱ ἐλεύθεροι κύριοι ὦσιν, ὀλιγαρχία δ' ὅταν οἱ πλούσιοι*, but afterwards at the end (l. 17): *ἀλλ' ἔστι δημοκρατία μὲν ὅταν οἱ ἐλεύθεροι καὶ ἄποροι πλείους ὄντες κύριοι τῆς ἀρχῆς ὦσιν, ὀλιγαρχία δ' ὅταν οἱ πλούσιοι καὶ εὐγενέστεροι ὀλίγοι ὄντες.* *Ibid.* 1291, b, 34: *εἴπερ γὰρ ἐλευθερία μάλιστ' ἐστὶν ἐν δημοκρατίᾳ καθάπερ ὑπολαμβάνουσί τινες καὶ ἰσότης.*

[2] vi. 2 *init*; *ὑπόθεσις μὲν οὖν τῆς δημοκρατικῆς πολιτείας ἐλευθερία* [or as it is expressed 1317, b, 16: *ἐλευθερία ἡ κατὰ τὸ ἴσον*] . . . *ἐλευθερίας δὲ ἓν μὲν τὸ ἐν μέρει ἄρχεσθαι καὶ ἄρχειν, καὶ γὰρ τὸ δίκαιον τὸ δημοτικὸν τὸ ἴσον ἔχειν ἐστὶ κατ' ἀριθμὸν ἀλλὰ μὴ κατ' ἀξίαν, τούτου δ' ὄντος τοῦ δικαίου τὸ πλῆθος ἀναγκαῖον εἶναι κύριον, καὶ ὅ τι ἂν δόξῃ τοῖς πλείοσι, τοῦτ' εἶναι καὶ τέλος καὶ τοῦτ' εἶναι τὸ δίκαιον· φασί γὰρ δεῖν ἴσον ἔχειν ἕκαστον τῶν πολιτῶν· ὥστε ἐν ταῖς δημοκρατίαις συμβαίνει κυριωτέρους εἶναι τοὺς ἀπόρους τῶν εὐπόρων· πλείους γάρ εἰσι, κύριον δὲ τὸ τοῖς πλείοσι δόξαν.* The equality of all citizens is thus seen to be the fundamental point from which government by majority follows as an inference (*συμβαίνει*) and from that again government by the poor.

[3] iv. 8, 1294, a, 10: *ἀριστοκρατίας μὲν γὰρ ὅρος ἀρετή, ὀλιγαρχίας δὲ πλοῦτος, δήμου δ' ἐλευθερία.* L. 19: *τρία ἐστὶ τὰ ἀμφισβητοῦντα τῆς ἰσότητος τῆς πολιτείας, ἐλευθερία πλοῦτος ἀρετή (τὸ γὰρ τέταρτον, ὃ καλοῦσιν εὐγένειαν, ἀκολουθεῖ τοῖς δυσίν· ἡ γὰρ εὐγένειά ἐστιν ἀρχαῖος πλοῦτος καὶ ἀρετή).* Cf. iii. 12, 1283, a, 16 sqq. (see p. 229, *supra*); v. 9, 1310, a, 28; *Rhet.* i. 8, 1366, a, 4: *ἔστι δὲ δημοκρατίας μὲν τέλος ἐλευθερία, ὀλιγαρχίας δὲ πλοῦτος, ἀριστοκρατίας δὲ τὰ πρὸς παιδείαν καὶ τὰ νόμιμα, τυραννίδος δὲ φυλακή.*

passage[1] he enumerates four constitutions: democracy, oligarchy, aristocracy, and government by one. In a democracy, he says, the offices of government are distributed according to lot, in an oligarchy according to property, in an aristocracy according to education.[2] The government of one is a monarchy if it is founded upon law and order; otherwise it is a tyranny. These statements are not altogether consistent with one another; but a still greater difficulty arises from the circumstance that in the further development of his argument Aristotle diverges widely from the order of arrangement which is naturally suggested by the previous survey of the different forms of constitution. Thus we should have expected from Book III. 14 onwards a discussion first of the three good kinds of State, and then of the three bad. Instead of this, Aristotle follows up the introductory dissertations which occupy chaps. 9–13 of the third book with a discussion of monarchy (III. 14–17); he next proposes to investigate (III. 18) the best form of State, which, however, he only partially does in the books (VII. and VIII.) which ought to follow here; he next turns, in the fourth book (chap. 2), to the remaining forms of constitution, with the remark that of the six previously enumerated forms monarchy and aristocracy have been disposed of, as these coincide with the best State, and that it therefore remains to discuss polity, oligarchy, democracy, and

[1] *Rhet.* i. 8, 1365, b, 29.

[2] Παιδεία ὑπὸ τοῦ νόμου κειμένη, by which we are to understand not so much intellectual culture as an education in accordance with law and morality and the political capacity and attachment to the existing constitution which spring from it: *οἱ γὰρ ἐμμεμενηκότες ἐν τοῖς νομίμοις ἐν τῇ ἀριστοκρατίᾳ ἄρχουσιν*, *ibid.* l. 35.

Birth and property are two further important points for consideration. While freemen as such are all equal, the nobly born claim to have inherited higher ability and rank from their ancestors; the rich, on the other hand, demand a greater share in the government, on the ground that the greater part of the national property is in their hands, and that propertied men in all matters of business are more reliable than unpropertied. Aristotle does not, indeed, admit these claims unconditionally, but he does not regard them as wholly unjustified, for although political privileges cannot be claimed on the ground of each and every superiority, but only of such as are of political importance, yet it cannot be denied that the advantages in question are 'political.'[1] Thus while in speaking of property distinctions he rejects the oligarchical demand for a plutocracy with the pertinent observation that it would be justifiable only on the supposition that the State is nothing but a mercantile company,[2] yet he cannot conceal from himself that distinctions of wealth are of the highest significance for the State. Riches and poverty both involve many kinds of moral evil: the rich commit outrage through arrogance, the poor through dishonesty; the former know neither how to obey nor how to rule over freemen, the latter neither how to rule nor how to obey as freemen; and where a State has fallen asunder into rich and poor, it has lost the inner bond of its communal life, in the equality, unanimity, and social sympathy of the citizens. The well-to-do middle class, being the mean, is the best: it

[1] iii. 12 sq. 1282, b, 21–1283, a, 37. [2] iii. 9, 1280, a, 22 sqq.

is best secured against excesses of its own and attacks of an enemy; it is the least anxious to put itself forward in political life; when the centre of gravity lies in it we have the most orderly and enduring form of government.[1] Whosoever would give stability to his political institutions must secure the support of this class, seeing that it holds the balance between the two contending parties of the rich and the poor.[2] More important still, however, is the political capacity of the citizens. The essential aim of the State is the happiness and moral perfection of the citizens; he who is able to contribute most to this will have the best claim to influence in the State. But that which more than any other quality fits a man to do so is virtue, especially justice and military ability, since, while the latter is indispensable for the preservation of the State, the former is that which lies at the foundation of all society and involves all other virtues.[3] There are thus different principles upon which political rights may be apportioned.[4] According as one or other of these is adopted,

[1] iv. 11, 1295, b, 1—1296, a, 21, where it is further shown that great cities are more exempt from disquiet than small ones, because they have a more numerous middle class; that democracies are more stable than oligarchies, because the middle class finds itself more at home in them—only, however, on condition that it does so—and that the best lawgivers, *e.g.* Solon, Lycurgus, Charondas, have belonged to the middle class.

[2] iv. 12, 1296, a, 34 sqq.

[3] iii. 9, 1281, a, 2 sqq. c. 12 sq. 1283, a, 19–26, 37.

[4] The character and geographical position of the country, and similar external circumstances might also be here adduced. To the political importance of these, as may be seen from *Polit.* vii. 6, c. 11, 1330, b, 17, vi. 7, 1321, a, 8 sqq., Aristotle was keenly alive. He admits that a maritime situation favours the rise of a numerous nautical population and thereby promotes democratic institutions. He remarks that an acropolis is favourable to monarchy and oligarchy, a flat country to democracy, a number of fastnesses

or as several of them are combined in a definite manner, will be the character of the resulting constitution. For while the differences in the general character of States depend upon the view taken of their end and of the means by which it is pursued,[1] the differences in the particular form of their constitution depend upon the share assigned to the different classes of the citizens in the public benefits and in the activities by which these are acquired.[2] The decisive question here, however, is:

to aristocracy; that where horse-breeding succeeds, and cavalry is therefore the chief military weapon, oligarchies are easily formed, &c. At the same time he suggests means (*ibid.*) to counteract such results, and as these circumstances do not in any case affect the form of constitution immediately, but only through the character of the people as that is determined by them, he leaves them out of account in the present investigation.

[1] vii. 8, 1328, a, 35: ἡ δὲ πόλις κοινωνία τίς ἐστι τῶν ὁμοίων, ἕνεκεν δὲ ζωῆς τῆς ἐνδεχομένης ἀρίστης. ἐπεὶ δ' ἐστὶν εὐδαιμονία τὸ ἄριστον, αὕτη δὲ ἀρετῆς ἐνέργεια καὶ χρῆσίς τις τέλειος, συμβέβηκε δὲ οὕτως ὥστε τοὺς μὲν ἐνδέχεσθαι μετέχειν αὐτῆς, τοὺς δὲ μικρὸν ἢ μηδέν, δῆλον ὡς τοῦτ' αἴτιον τοῦ γίγνεσθαι πόλεως εἴδη καὶ διαφορὰς καὶ πολιτείας πλείους· ἄλλον γὰρ τρόπον καὶ δι' ἄλλων ἕκαστοί τοῦτο θηρεύοντες τούς τε βίους ἑτέρους ποιοῦνται καὶ τὰς πολιτείας.

[2] After enumerating the forms of activity which are indispensable to the existence of society, and the corresponding classes of citizens (farmers, artisans, soldiers, proprietors, priests, judges and administrators) Aristotle proceeds *ibid.* c. 9 *init.*: διωρισμένων δὲ τούτων λοιπὸν σκέψασθαι πότερον πᾶσι κοινωνητέον πάντων τούτων . . . ἢ καθ ἕκαστον ἔργον τῶν εἰρημένων ἄλλους ὑποθετέον, ἢ τὰ μὲν ἴδια τὰ δὲ κοινὰ τούτων ἐξ ἀνάγκης ἐστίν. (Cf. ii. 1, 1260, b, 37.) ταῦτα γὰρ καὶ ποιεῖ τὰς πολιτείας ἑτέρας· ἐν μὲν γὰρ ταῖς δημοκρατίαις μετέχουσι πάντες πάντων, ἐν δὲ ταῖς ὀλιγαρχίαις τοὐναντίον. Similarly, and with express reference to this passage, iv. 3, 1289, a, 27 sqq.: τοῦ μὲν οὖν εἶναι πλείους πολιτείας αἴτιον ὅτι πάσης ἐστὶ μέρη πλείω πόλεως τὸν ἀριθμόν. A State consists of an aggregation of households, of people of large, small and average means, of warlike and unwarlike, of farmers, merchants and artisans; further, there are differences of birth and capacity (ἀρετή). Of these classes sometimes fewer, sometimes more, sometimes all, share in the government (πολιτεία). Φανερὸν τοίνυν ὅτι πλείους ἀναγκαῖον εἶναι πολιτείας εἴδει διαφερούσας ἀλλήλων· καὶ γὰρ ταῦτ' εἴδει διαφέρει τὰ μέρη σφῶν αὐτῶν. πολιτεία μὲν

Who possesses the supreme power—who is *sovereign*?[1] The different possible ways of adjusting the relations of the various classes to one another are therefore enumerated by Aristotle with a view to preparing the way for an investigation into the comparative value of particular forms of constitution, the conditions of their rise and continuance, and the institutions which correspond to them.

### 4. *Forms of Constitution*

We are accustomed to understand by the term 'Constitution' only the general form of government of a particular State—the sum of the arrangements which regulate the distribution within it of political functions.[2]

γὰρ ἡ τῶν ἀρχῶν τάξις ἐστί, ταύτην δὲ διανέμονται πάντες ἢ κατὰ τὴν δύναμιν τῶν μετεχόντων ἢ κατά τιν' αὐτῶν ἰσότητα κοινήν . . . ἀναγκαῖον ἄρα πολιτείας εἶναι τοσαύτας ὅσαιπερ τάξεις κατὰ τὰς ὑπεροχάς εἰσι καὶ κατὰ τὰς διαφορὰς τῶν μορίων. With the same view of explaining the different forms of constitution, the different classes in a community are then again enumerated (c. 4, 1290, b, 21 sqq.) as follows: farmers, artisans, traders, day-labourers, soldiers, rich (εὔποροι) who serve the state with their money, magistrates, judges, and members of the supreme administration. (In this enumeration, the words ἕβδομον and ὄγδοον, 1291, a, 33 sq., cause a difficulty, to avoid which NICKES, *De Arist. Polit. libr.* 110, proposes to read ἕκτον and ἕβδομον, while SUSEMIHL, *in loco*, with CONRING, supposes a lacuna before ἕβδομον, in which he supposes the sixth class was mentioned.)

[1] iii. 6 *init.*: We must ask how many and what constitutions there are? ἔστι δὲ πολιτεία πόλεως τάξις τῶν τε ἄλλων ἀρχῶν καὶ μάλιστα τῆς κυρίας πάντων. κύριον μὲν γὰρ πανταχοῦ τὸ πολίτευμα τῆς πόλεως, πολίτευμα δ' ἐστὶν ἡ πολιτεία. (Cf. c. 7, 1279, a, 25.) In democracies the people is sovereign (κύριος); in oligarchies only a minority of the people: hence the difference in these forms of constitution.

[2] This is at least the scientific conception of the constitution; the written documents which define the constitution certainly neither contain all that according to this conception is included under it, nor do they confine themselves to it, but generally they contain all those laws which, as fundamental to the State, seem to require special sanction.

Aristotle meant far more by it. He comprehends under the corresponding word 'Polity,' not only all this, but also the substantial character of the community in question, as that expresses itself in the accepted theory of the State and in the spirit of its government.[1] He has thus the advantage of exhibiting more clearly than is commonly done by modern writers the connection of the political institutions of a people with its life as a whole, and is less exposed to the danger of treating these as something independent and equally applicable to all communities. Here as elsewhere in the *Politics* the leading characteristic of his method is the care he takes scientifically to trace everything back to its real source, and to find the principle of its explanation in its own peculiar nature. On the other hand, it cannot be denied that the treatment of political constitutions suffers in simplicity when it does not confine itself to deducing them as the forms of an organised civil life from the spirit and mutual relations of the citizens, but mixes itself up with the discussion of the legal details of that life itself. Aristotle is not free from this confusion,[2]

[1] As is obvious, *inter alia*, from p. 232, n. 1, with which cf. p. 232, n. 2, and p. 233, n. 1, *supra*.

[2] Besides the passage just referred to above, see esp. *Polit.* iv. 1, 1289, a, 13: πρὸς γὰρ τὰς πολιτείας τοὺς νόμους δεῖ τίθεσθαι καὶ τίθενται πάντες, ἀλλ' οὐ τὰς πολιτείας πρὸς τοὺς νόμους. πολιτεία μὲν γάρ ἐστι τάξις ταῖς πόλεσιν ἡ περὶ τὰς ἀρχὰς, τίνα τρόπον νενέμηνται, καὶ τί τὸ κύριον τῆς πολιτείας καὶ τί τὸ τέλος ἑκάστης τῆς κοινωνίας ἐστίν· νόμοι δὲ κεχωρισμένοι τῶν δηλούντων τὴν πολιτείαν, καθ' οὓς δεῖ τοὺς ἄρχοντας ἄρχειν καὶ φυλάττειν τοὺς παραβαίνοντας αὐτούς. So also vii. 13 *init.*, and throughout the whole discussion of the different forms of constitution, the question as to the nature of the πολιτεία is taken to involve that of the ultimate aim of the State, and the investigation into the ἀρίστη πολιτεία (see *infra*) is more concerned with the laws upon education and the like than with questions properly constitutional in our sense.

although in general he has clearly distinguished between questions of law and constitution.[1]

In investigating political constitutions Aristotle complains[2] that previous writers had contented themselves with representing an ideal State, or else with eulogising the Spartan or some other historical constitution. Aristotle himself aims at a more exhaustive treatment of his subject. Political science cannot, he says, any more than any other, limit itself to the description of an ideal. It must also show what form of State is the best attainable under certain given circumstances; it must further take account of actually existing constitutions and of the conditions of their rise and maintenance; and it must be able, finally, to declare what institutions are best adapted for the majority of States.[3] The description of the political ideal must

[1] See preced. n. and *Polit.* ii. 6, 1265, a, 1; *Eth.* x. 10, 1181, b, 12: as his predecessors have not (sufficiently) investigated the question of legislation, he will himself treat generally of this as well as of the State (πολιτεία). L. 21: ποία πολιτεία ἀρίστη, καὶ πῶς ἑκάστη ταχθεῖσα, καὶ τίσι νόμοις καὶ ἔθεσι χρωμένη.

[2] *Polit.* iv. 1, 1288, b, 33 sqq. This complaint, however, is not altogether just in respect of Plato, who not only in the *Laws* had placed a second State beside his ideal republic, but in the *Rep.* itself had fully discussed the imperfect forms of constitution. It is true, however, that none of these investigations satisfies Aristotle's requirements.

[3] *Polit.* iv. 1. Aristotle here sets before Politics a fourfold problem: (1) πολιτείαν τὴν ἀρίστην θεωρῆσαι τίς ἐστι καὶ ποία τις ἂν οὖσα μάλιστ' εἴη κατ' εὐχὴν, μηδενὸς ἐμποδίζοντος τῶν ἐκτός; (2) besides the ἁπλῶς κρατίστη to discuss also τὴν ἐκ τῶν ὑποκειμένων ἀρίστην; similarly (3), τὴν ἐξ ὑποθέσεως, and (4) τὴν μάλιστα πάσαις ταῖς πόλεσιν ἁρμόττουσαν (on which see c. 11 *init.*). Of these four questions the third has not infrequently been very strangely misunderstood, *e.g.* by BARTHÉLEMY ST-HILAIRE, but also by GÖTTLING *in loco.* Aristotle himself, however, states (1288, b, 28) his meaning quite unambiguously. ἔτι δὲ τρίτην, he says, τὴν ἐξ ὑποθέσεως· δεῖ γὰρ καὶ τὴν δοθεῖσαν δύνασθαι θεωρεῖν, ἐξ ἀρχῆς τε πῶς ἂν γένοιτο, καὶ γενομένη τίνα τρόπον ἂν σώζοιτο

therefore be supplemented by a comprehensive survey of actual facts. Aristotle does not renounce such an ideal, but desires at the same time to investigate all other possible forms of State, the conditions under which they naturally rise, the laws which they adopt, and the institutions by which they are maintained. He examines States with the keen sense of the scientific investigator, who pays equal regard to the small and the great, to the normal and the abnormal, as well as with the practical eye of the statesman, who desires to do justice to the actual circumstances and adapt his ideal to the given conditions.[1] He possesses, moreover,

πλεῖστον χρόνον· λέγω δ' οἷον εἴ τινι πόλει συμβέβηκε μήτε τὴν ἀρίστην πολιτεύεσθαι πολιτείαν ἀχορήγητόν τε εἶναι καὶ τῶν ἀναγκαίων [the necessary requisites for the best], μήτε τὴν ἐνδεχομένην ἐκ τῶν ὑπαρχόντων, ἀλλά τινα φαυλοτέραν. (Cf. iv. 11, 1296, b, 9: λέγω δὲ τὸ πρὸς ὑπόθεσιν, ὅτι πολλάκις οὔσης ἄλλης πολιτείας αἱρετωτέρας ἐνίοις οὐθὲν κωλύσει συμφέρειν ἑτέραν μᾶλλον εἶναι πολιτείαν; also v. 11, 1314, a, 38.) The πολιτεία ἐξ ὑποθέσεως is, according to this statement, identical with ἡ δοθεῖσα πολιτεία, ὑπόθεσις indicating the given case, the particular circumstances that are actually present, and having, therefore, essentially the same meaning as on p. 247, n. 2, and *Ph.d.Gr.* i. 1015 *med.*, where it is distinguished from θέσις. With the above passage PLAT. *Laws*, v. 739, A sqq., has been compared. The resemblance, however, is a remote one; for (1) Plato speaks not of four but only of three States to be depicted; (2) he enters into no details with reference to the third of these (the first is that of the *Rep.*, the second that of the *Laws*), but he can hardly have been thinking of actually existing States; (3) even the second State, that of the *Laws*, does not correspond with Aristotle's πολιτεία ἐκ τῶν ὑποκειμένων ἀρίστη, for Plato does not show in this work what is the best that can be evolved from existing circumstances, but, just as in the *Rep.*, sketches the outline of an ideal State, which only differs from that in the *Rep.* in bearing a closer resemblance to reality. Still less can the State in the *Laws* be identified with Aristotle's πολιτεία ἐξ ὑποθέσεως ἀρίστη, nor would Grote have done so (*Plato*, iii. 357 sq.) had he not wrongly explained ὑπόθεσις to mean an 'assumed principle.'

[1] See his complaint against his predecessors, *ibid.* 1288, b, 35: ὡς οἱ πλεῖστοι τῶν ἀποφαινομένων περὶ πολιτείας, καὶ εἰ τἆλλα

the philosophic spirit, which traces political institutions back to their inner sources, looks past individual facts to universal conceptions, and while engaged in the investigation of existing realities keeps an eye steadily fixed on the ideal. It is just this combination of dissimilar and rarely united qualities that makes Aristotle's political philosophy so unique and unrivalled in its kind.

Two points of view have emerged in the preceding discussion, from which we may distinguish and estimate the different forms of political constitution—viz. the recognised aim of government, and the distribution of political power. In the former respect the contrast is between those States in which the common good and those in which the advantage of the rulers is pursued as the highest end.[1] In treating, on the other hand, of the distribution of political power, Aristotle retains at first the customary arithmetical division of States according as they are governed by one, by some, or by all of the citizens. Combining these two principles, he enumerates six forms of constitution, three of which are good and three bad, setting down all those as unjust and despotic in which the aim is not the common good, but the advantage of the rulers.[2] Where the

*λέγουσι καλῶς, τῶν γε χρησίμων διαμαρτάνουσιν.*

[1] iii. 6. 1278, a, 30 sqq.: As in the household the government of the slaves aims at securing in the first instance the advantage of the master, and only secondarily that of the slaves as a means to the former, and as the government of the family, on the other hand, aims primarily at the good of the governed, but in a secondary way also at that of the head of the house in so far as he is himself a member of the family—so in the State we must distinguish the two above-mentioned kinds of government.

[2] iii. 6 *fin.*: *φανερὸν τοίνυν ὡς ὅσαι μὲν πολιτεῖαι τὸ κοινῇ συμφέρον*

administration has for its object the common good, if one is the sovereign, we have a monarchy; if a minority, an aristocracy; if the whole body of the citizens, a polity; where it has for its object the advantage of the sovereign, monarchy degenerates into tyranny, aristocracy into oligarchy, polity into democracy.[1] This

σκοποῦσιν, αὗται μὲν ὀρθαὶ τυγχάνουσιν οὖσαι κατὰ τὸ ἁπλῶς δίκαιον, ὅσαι δὲ τὸ σφέτερον μόνον τῶν ἀρχόντων, ἡμαρτημέναι πᾶσαι καὶ παρεκβάσεις τῶν ὀρθῶν πολιτειῶν· δεσποτικαὶ γάρ, ἡ δὲ πόλις κοινωνία τῶν ἐλευθέρων ἐστίν. Hence iii 17 *init.*: ἔστι γάρ τι φύσει δεσποστὸν καὶ ἄλλο βασιλευτὸν καὶ ἄλλο πολιτικὸν καὶ δίκαιον καὶ συμφέρον· τυραννικὸν δ' οὐκ ἔστι κατὰ φύσιν, οὐδὲ τῶν ἄλλων πολιτειῶν ὅσαι παρεκβάσεις εἰσίν· ταῦτα γὰρ γίγνεται παρὰ φύσιν.

[1] *Polit.* iii. 7, iv. 2, 1289, a, 26, b, 9; *Eth.* viii. 12. Aristotle's account is here essentially that of Plato in the *Politicus* (cf. *Ph. d. Gr.* i. p. 784), of which he himself, *Polit.* iv. 2, 1289, b, 5, reminds us, while at the same time he differs from it in a single respect. There is, indeed, between the *Ethics* and the *Politics* this divergency, that while in the latter the third of the three true forms of constitution is called simply 'polity,' it is said in the *Ethics*: τρίτη δ' ἡ ἀπὸ τιμημάτων, ἣν τιμοκρατικὴν λέγειν οἰκεῖον φαίνεται, πολιτείαν δ' αὐτὴν εἰώθασιν οἱ πλεῖστοι καλεῖν. This discrepancy, however, is not so important that we may infer from it a change in Aristotle's political views, or that to permit time for its occurrence we may place the *Ethics* on this ground considerably earlier than the *Politics*. For as a matter of fact the latter also describes its polity as a timocracy (see *Ph. d. Gr.* i. p. 745 sq.), so that the difference resolves itself finally into this: that in the *Ethics*, *brevitatis causa*, Aristotle calls it timocracy, whereas in the *Politics* he appropriates to it the common term πολιτεία, as he has room here to describe more accurately what he means by it. ISOCR. *Panath.* 131, has been taken to refer to the passage just cited from the *Ethics* (ONCKEN, *Staatsl. d. Arist.* ii. 160), and the conclusion drawn that the *Ethics* cannot have been composed later than ann. 342–339 B.C. (HENKEL, *Stud. zür Gesch. d. griech. Lehre vom Staat*, 46; Oncken takes another view). But it seems more probable that the passage refers to Plato, who in the *Politicus* (302 D sq.) adduces legal democracy, and in the *Republic* (viii. 545 B, C) timocracy, as peculiar forms of constitution; for Isocrates does not say that the writer upon whom his attack is made identifies these two (as Aristotle does). If, however, we are to find here a reference to the *followers* of Plato as well, and especially to Aristotle, it would probably be better to suppose that the rhetorician has in view one of his dia-

principle of arrangement, however, is not consistently preserved throughout; for while it might appear from the above statement that aristocracy and polity differ from monarchy only in the number of the rulers, we learn in another passage that this itself depends upon the character of the people. So the government by one is natural where in a people one family has a pre-eminent faculty for government; aristocracy, where a community of free citizens is content to submit to the government of the fittest; polity, where the population is a military one which, having distributed the offices of State among the propertied classes according to the standard of merit, knows both how to command and how to obey.[1] Referring further to the distinction between democracy and oligarchy, Aristotle criticises those who look for it in the fact that in the former the whole body, in the latter a minority, of the citizens hold the sovereignty. This numerical distinction, he holds, is merely accidental and derivative: the essential opposition of these two forms of constitution consists in the fact that in the one the rich, in the other the poor, bear rule.[2] In like manner that polity which stands between them is distinguished by the preponderance of the middle class.[3] Elsewhere he finds the characteristic

logues (such as that mentioned in *Polit.* iii 6; see i. p. 119, n. 1, *supra*). That the *Ethics* cannot have been composed so early as Henkel believes, has already been shown, i. p. 154 sq.

[1] iii. 17, 1288, a, 1: *βασιλευτὸν μὲν οὖν τὸ τοιοῦτόν ἐστι πλῆθος ὃ πέφυκε φέρειν γένος ὑπερέχον κατ' ἀρετὴν πρὸς ἡγεμονίας πολιτικήν, ἀριστοκρατικὸν δὲ πλῆθος ὃ πέφυκε φέρειν πλῆθος ἄρχεσθαι δυνάμενον τὴν τῶν ἐλευθέρων ἀρχὴν ὑπὸ τῶν κατ' ἀρετὴν ἡγεμονικῶν πρὸς πολιτικὴν ἀρχήν, πολιτικὸν δὲ πλῆθος ἐν ᾧ πέφυκεν ἐγγίνεσθαι πλῆθος πολεμικόν, δυνάμενον ἄρχεσθαι καὶ ἄρχειν κατὰ νόμον τὸν κατ' ἀξίαν διανέμοντα τοῖς εὐπόροις τὰς ἀρχάς.*

[2] *Polit.* iii. 8, cf. c. 7 *fin.* iv. 11, 12, 1296, a, 1, b, 24 sqq.

[3] iv. 12, 1296, b, 38.

peculiarity of democracy in freedom and equality, in the fact that all free men have an equal share in the government; and then combining this principle with the two others, he says that in democracy the majority of the poor and the free, in oligarchy conversely the minority of the rich and the noble, are the rulers;[1] for since in a State where all are equal the majority of votes decides, and the poor always form a majority, these have necessarily the power in their own hands.[2] Following up the same line of thought, he indicates virtue, wealth, and freedom as severally characteristic of different forms of constitution: virtue of aristocracy, wealth of oligarchy, freedom of democracy.[3] In a third

[1] iv. 4, where it is first said (1290, b, 1): δῆμος μέν ἐστιν ὅταν οἱ ἐλεύθεροι κύριοι ὦσιν, ὀλιγαρχία δ' ὅταν οἱ πλούσιοι, but afterwards at the end (l. 17): ἀλλ' ἔστι δημοκρατία μὲν ὅταν οἱ ἐλεύθεροι καὶ ἄποροι πλείους ὄντες κύριοι τῆς ἀρχῆς ὦσιν, ὀλιγαρχία δ' ὅταν οἱ πλούσιοι καὶ εὐγενέστεροι ὀλίγοι ὄντες. *Ibid.* 1291, b, 34: εἴπερ γὰρ ἐλευθερία μάλιστ' ἐστὶν ἐν δημοκρατίᾳ καθάπερ ὑπολαμβάνουσί τινες καὶ ἰσότης.

[2] vi. 2 *init*; ὑπόθεσις μὲν οὖν τῆς δημοκρατικῆς πολιτείας ἐλευθερία [or as it is expressed 1317, b, 16: ἐλευθερία ἡ κατὰ τὸ ἴσον] . . . ἐλευθερίας δὲ ἓν μὲν τὸ ἐν μέρει ἄρχεσθαι καὶ ἄρχειν, καὶ γὰρ τὸ δίκαιον τὸ δημοτικὸν τὸ ἴσον ἔχειν ἐστὶ κατ' ἀριθμὸν ἀλλὰ μὴ κατ' ἀξίαν, τούτου δ' ὄντος τοῦ δικαίου τὸ πλῆθος ἀναγκαῖον εἶναι κύριον, καὶ ὅ τι ἂν δόξῃ τοῖς πλείοσι, τοῦτ' εἶναι καὶ τέλος καὶ τοῦτ' εἶναι τὸ δίκαιον· φασί γὰρ δεῖν ἴσον ἔχειν ἕκαστον τῶν πολιτῶν· ὥστε ἐν ταῖς δημοκρατίαις συμβαίνει κυριωτέρους εἶναι τοὺς ἀπόρους τῶν εὐπόρων· πλείους γάρ εἰσι, κύριον δὲ τὸ τοῖς πλείοσι δόξαν. The equality of all citizens is thus seen to be the fundamental point from which government by majority follows as an inference (συμβαίνει) and from that again government by the poor.

[3] iv. 8, 1294, a, 10: ἀριστοκρατίας μὲν γὰρ ὅρος ἀρετή, ὀλιγαρχίας δὲ πλοῦτος, δήμου δ' ἐλευθερία. L. 19: τρία ἐστὶ τὰ ἀμφισβητοῦντα τῆς ἰσότητος τῆς πολιτείας, ἐλευθερία πλοῦτος ἀρετή (τὸ γὰρ τέταρτον, ὃ καλοῦσιν εὐγένειαν, ἀκολουθεῖ τοῖς δυσίν· ἡ γὰρ εὐγένειά ἐστιν ἀρχαῖος πλοῦτος καὶ ἀρετή). Cf. iii. 12, 1283, a, 16 sqq. (see p. 229, *supra*); v. 9, 1310, a, 28; *Rhet.* i. 8, 1366, a, 4: ἔστι δὲ δημοκρατίας μὲν τέλος ἐλευθερία, ὀλιγαρχίας δὲ πλοῦτος, ἀριστοκρατίας δὲ τὰ πρὸς παιδείαν καὶ τὰ νόμιμα, τυραννίδος δὲ φυλακή.

passage[1] he enumerates four constitutions: democracy, oligarchy, aristocracy, and government by one. In a democracy, he says, the offices of government are distributed according to lot, in an oligarchy according to property, in an aristocracy according to education.[2] The government of one is a monarchy if it is founded upon law and order; otherwise it is a tyranny. These statements are not altogether consistent with one another; but a still greater difficulty arises from the circumstance that in the further development of his argument Aristotle diverges widely from the order of arrangement which is naturally suggested by the previous survey of the different forms of constitution. Thus we should have expected from Book III. 14 onwards a discussion first of the three good kinds of State, and then of the three bad. Instead of this, Aristotle follows up the introductory dissertations which occupy chaps. 9–13 of the third book with a discussion of monarchy (III. 14–17); he next proposes to investigate (III. 18) the best form of State, which, however, he only partially does in the books (VII. and VIII.) which ought to follow here; he next turns, in the fourth book (chap. 2), to the remaining forms of constitution, with the remark that of the six previously enumerated forms monarchy and aristocracy have been disposed of, as these coincide with the best State, and that it therefore remains to discuss polity, oligarchy, democracy, and

[1] *Rhet.* i. 8, 1365, b, 29.

[2] Παιδεία ὑπὸ τοῦ νόμου κειμένη, by which we are to understand not so much intellectual culture as an education in accordance with law and morality and the political capacity and attachment to the existing constitution which spring from it: οἱ γὰρ ἐμμεμενηκότες ἐν τοῖς νομίμοις ἐν τῇ ἀριστοκρατίᾳ ἄρχουσιν, *ibid.* l. 35.

tyranny; he accordingly now proceeds to investigate, in the first place (chap. 4, 1291, b, 14–chap. 6, end), the different forms of democracy and oligarchy; then (chap. 8 sq.) polity as the proper blending of these two constitutions, along with several kindred forms (chap. 7); and, lastly, tyranny (chap. 10). This divergence from the previous account is much too fundamental to permit of its being accounted for by the incomplete character of the *Politics* alone, and too indispensable to permit of its being explained away.[1] We are forced to admit that just as Aristotle in his account of the distinguishing characteristics of democracy and oligarchy unites several different points of view which he fails completely to harmonise with one another, so also in his treatment of polity he is not free from a certain vacillation. On the one hand, he reckons it among the good States, on the ground that it is based upon the virtue of the citizens and aims at the common good. On the other hand, he is unable to

[1] *E.g.* in the manner proposed by FECHNER (*üb. d. Gerechtigkeitsbegriff d. Arist.* p. 71 sq. n., cf. p. 92, 1), who assumes that by the polity of *Eth.* viii. 12 and *Polit.* iv. we must understand something different from the 'true polity' which appears in *Polit.* vii. as the ideal State. Setting aside the unlikelihood of Aristotle's describing two different forms of constitution by the same name without qualifying addition, and of his totally omitting in his subsequent discussion all further mention of the 'true polity' described in iii., we may point out: (1) that the perfect State described in vii. and viii. is never referred to (not even iii. 7, 1279, a, 39, vii. 14, 1332, a, 34) as polity (πολιτεία simply), but as aristrocacy or ἀρίστη πολιτεία (*e.g.* iv. 7, 1293, b, 1, c. 2, 1289, a, 31), and that polity stands only third among true constitutions; (2) that in passages such as *Polit.* iv. 2 *init.* c. 8 *init.* we are expressly forbidden to make any distinction between the polity of iv. and of the *Ethics*, and the polity previously mentioned among the true forms of constitution.

place it on a level with true monarchy and aristocracy.[1] For it is still government by the many, and a majority can never atttain to so high a degree of virtue and insight as is possible to one or to few. The one field in which a polity can win distinction is the military, and accordingly the sovereign in it will naturally be the collective body of those capable of bearing arms.[2] The virtue, therefore, upon which the State is here founded is an imperfect one. The natural antagonisms between the citizens are not removed, as in an aristocracy, by a comprehensive and uniform education of all and an equal freedom from meaner employments. The problem, therefore, must be to devise for it such institutions that antagonistic forces will be held in equilibrium, the excesses alike of democracy and of oligarchy avoided, and the foundation laid for that predominance of the middle classes which constitutes in Aristotle's opinion, as we shall see, the chief advantage of polity. While it is possible in this way to explain the place which this form of constitution occupies in Aristotle's account, the ambiguity of its position remains a permanent defect in his theory of the State. The fundamental mistake,

[1] Cf. *Eth.* viii. 12, 1160, a, 35: τούτων δὲ [of the true forms of State] βελτίστη μὲν ἡ βασιλεία, χειρίστη δ' ἡ τιμοκρατία (which here = πολιτεία; cf. p. 238, n. 1, *sup.*) b, 16: democracy is chiefly related to timocracy, the majority of the citizens ruling in both with equal right, and springs from it almost imperceptibly.

[2] iii. 7, 1279, a, 39: ἕνα μὲν γὰρ διαφέρειν κατ' ἀρετὴν ἢ ὀλίγους ἐνδέχεται, πλείους δ' ἤδη χαλεπὸν ἠκριβῶσθαι πρὸς πᾶσαν ἀρετὴν ἀλλὰ μάλιστα τὴν πολεμικήν· αὕτη γὰρ ἐν πλήθει γίγνεται. διόπερ κατὰ ταύτην τὴν πολιτείαν κυριώτατον τὸ προπολεμοῦν καὶ μετέχουσιν αὐτῆς οἱ κεκτημένοι τὰ ὅπλα. In accordance with this passage and c. 17 (see 239, n. 1, *supra*) we should read in l. 37 (differently from SPENGEL, *Abh. d. Münchn. Akad. philos.-philol. Kl.* v. 23), instead of τὸ πλῆθος, τὸ πολεμικὸν πλῆθος.

however, which is the cause of this ambiguity, consists in the crude division of political constitutions into good and bad, with which he starts. In polity and that improper form of aristocracy which is akin to it, there obtrudes itself between these two alternatives a third kind, which has no clear place assigned to it, unless we give up this division and supplement the qualitative opposition between good and bad by a quantitative difference in degrees of perfection.[1]

Inquiring next into the respective titles of these different forms of constitution, we must first recall what was said above—viz. that in each and all of them the question is of a distribution of rights and privileges which can only be determined according to the principles of distributive justice. These demand that equals receive an equal portion; unequals, on the contrary, in proportion to their inequality an unequal portion.[2] It is not, however, each and every superiority that entitles to political privileges, but only those which, like birth, freedom, wealth, virtue, stand in intimate relation to the qualities which are essential to a citizen, and are the indispensable elements in a full and satisfy-

[1] Aristotle himself takes occasion (iv. 8 *init.*) to justify the place he assigns to polity. Ἐτάξαμεν δ' οὕτως, he says, *οὐκ οὖσαν οὔτε ταύτην* [polity] *παρέκβασιν οὔτε τὰς ἄρτι ῥηθείσας ἀριστοκρατίας, ὅτι τὸ μὲν ἀληθὲς πᾶσαι διημαρτήκασι τῆς ὀρθοτάτης πολιτείας*, &c. But this only serves to corroborate the above remarks. For if polity is neither the best nor a vicious form of constitution, it is obvious that constitutions cannot be divided simply into good and bad, seeing that what differentiates polity from the best State is a mere want, so that one and the same constitution presents itself in comparison with the best as a defective one (*διημαρτήκασι*), in comparison with all others as a true one. Even in respect of the other forms Aristotle admits that they may be relatively good; cf. *e.g.* v. 9, 1309, b, 18–35.

[2] See p. 228 sq. *supra*.

ing social life.[1] But even any one of such advantages as these confers no title to rule in the State. Those who demand to stand on a footing of equality with others in everything because they are equal in something, or who assert pre-eminence in all respects on the ground of pre-eminence in some, put forward an unfounded claim.[2] The problem therefore is, to determine the relative worth of those qualities upon which a title to political privileges can be based, and thus to estimate the value of the claims of the various classes to the sovereignty, as these express themselves in the various forms of constitution.[3] The highest of these qualities, and that which in the perfect State is alone of importance, Aristotle declares, as we have already seen,[4] to be virtue; although he does not deny to the others their importance. But besides the character of individuals, we must also take into account their numerical proportion. It does not follow because an individual or the members of a minority are superior to all the rest individually in virtue, insight and property, that they must therefore be superior to the whole body taken together. A majority of individuals, each of whom taken by himself is inferior to the minority, may as a whole possess an advantage over them, as each member finds his complement in the other, and all thus attain a higher perfection. The individual contribution to the

[1] iii. 12, 1282, b, 21-1283, a, 23; cf. p. 229 sq. *supra*.

[2] iii. 9, 1280, a, 22, c. 13, 1283, a, 26, v. 1, 1301, a, 25 sqq. b, 35.

[3] Aristotle does not himself formulate the problem precisely thus, but the above statement of it corresponds to what he says iii. 13, 1283, a, 29-b, 9 upon the ἀμφισβήτησις and the κρίσις τίνας ἄρχειν δεῖ.

[4] P. 230 sq. *supra*.

State in this case is less, but the sum of the contributions is greater than in the case of the others.[1] If this does not hold of every body of people without distinction, yet there may be peoples of whom it is true.[2] In such cases, while it would certainly be wrong to entrust to individual members of the majority offices of State which require special personal qualifications, yet it must be the people as a whole who in the public assemblies and law courts pass decisions, elect magistrates, and supervise their administration,[3] all the more as it would be in the highest degree dangerous for the State to convert the majority of the citizens into enemies by completely excluding them from a share in the government.[4] In answer to the objection that this is to set the incapable in judgment over the capable, to place the more important function (viz. the highest

[1] Aristotle frequently returns to this acute remark, which is of so much importance in estimating democratic institutions; see iii. 11 *init.*: *ὅτι δὲ δεῖ κύριον εἶναι μᾶλλον τὸ πλῆθος ἢ τοὺς ἀρίστους μὲν ὀλίγους δὲ, δόξειεν ἂν λύεσθαι καί τιν' ἔχειν ἀπορίαν, τάχα δὲ κἂν ἀλήθειαν. τοὺς γὰρ πολλοὺς, ὧν ἕκαστός ἐστιν οὐ σπουδαῖος ἀνὴρ, ὅμως ἐνδέχεται συνελθόντας εἶναι βελτίους ἐκείνων, οὐχ ὡς ἕκαστον ἀλλ' ὡς σύμπαντας, οἷον τὰ συμφορητὰ δεῖπνα τῶν ἐκ μιᾶς δαπάνης χορηγηθέντων* [similarly c. 15, 1286, a, 25]· *πολλῶν γὰρ ὄντων ἕκαστον μόριον ἔχειν ἀρετῆς καὶ φρονήσεως, καὶ γίνεσθαι συνελθόντας ὥσπερ ἕνα ἄνθρωπον τὸ πλῆθος πολύποδα καὶ πολύχειρα καὶ πολλὰς ἔχοντ' αἰσθήσεις. οὕτω καὶ περὶ τὰ ἤθη καὶ τὴν διάνοιαν.* c. 13, 1283, a, 40: *ἀλλὰ μὴν καὶ οἱ πλείους πρὸς τοὺς ἐλάττους* [sc. *ἀμφισβητήσειαν ἂν περὶ τῆς ἀρχῆς*]· *καὶ γὰρ κρείττους καὶ πλουσιώτεροι καὶ βελτίους εἰσὶν, ὡς λαμβανομένων τῶν πλειόνων πρὸς τοὺς ἐλάττους.* 1283, b, 33: *οὐδὲν γὰρ κωλύει ποτὲ τὸ πλῆθος εἶναι βέλτιον τῶν ὀλίγων καὶ πλουσιώτερον, οὐχ ὡς καθ' ἕκαστον ἀλλ' ὡς ἀθρόους.*

[2] iii. 11, 1282, b, 15.

[3] By the public scrutiny (*εὐθύνη*), c. 11, 1281, b, 33, 1282, a, 26.

[4] c. 11, 1281, b, 21 sqq., especially l. 34: *πάντες μὲν γὰρ ἔχουσι συνελθόντες ἱκανὴν αἴσθησιν, καὶ μιγνύμενοι τοῖς βελτίοσι τὰς πόλεις ὠφελοῦσιν, καθάπερ ἡ μὴ καθαρὰ τροφὴ μετὰ τῆς καθαρᾶς τὴν πᾶσαν ποιεῖ χρησιμωτέραν τῆς ὀλίγης· χωρὶς δ' ἕκαστος ἀτελὴς περὶ τὸ κρίνειν ἐστίν.*

authority in the State) in the hands of those who are excluded from the less important (viz. the individual offices), Aristotle adds to the above exposition [1] the further pertinent observation that there are many things of which the user can judge as well as or better than the specialist who makes them: [2] in other words, that the people, although it may not understand much about the details of State and government, may yet know well enough whether or not a government is advancing its interests. The smaller capacity, therefore, of the individuals may be counterbalanced and even outweighed by their greater numbers; and *vice versa*, their greater capacity by their smaller number. The more capable have no claim to the possession of power if there are too few of them to govern or to form of themselves a State.[3] The first condition of the survival of any constitution is that its supporters should be superior to its enemies. But this is a question, not of quality alone, but of numbers. It is only by taking both of these elements into account that we can properly estimate the balance of political power. The stronger party is the one which is superior to the other, either in both these respects or so decisively in one of them that the deficiency in

[1] Cf. further c. 11, 1282, a, 14: *ἔσται γὰρ ἕκαστος μὲν χείρων κριτὴς τῶν εἰδότων, ἅπαντες δὲ συνελθόντες ἢ βελτίους ἢ οὐ χείρους.* L. 34: *οὐ γὰρ ὁ δικαστὴς οὐδ' ὁ ἐκκλησιαστὴς ἄρχων ἐστὶν, ἀλλὰ τὸ δικαστήριον καὶ ἡ βουλὴ καὶ ὁ δῆμος· τῶν δὲ ῥηθέντων ἕκαστος μόριόν ἐστι τούτων . . . ὥστε δικαίως κύριον μειζόνων τὸ πλῆθος· ἐκ γὰρ πολλῶν ὁ δῆμος καὶ ἡ βουλὴ καὶ τὸ δικαστήριον. καὶ τὸ τίμημα δὲ πλεῖον τὸ πάντων τούτων ἢ τῶν καθ' ἕνα καὶ κατ' ὀλίγους μεγάλας ἀρχὰς ἀρχόντων.*

[2] *Ibid.* 1282, a, 17.

[3] iii. 13, 1283, b, 9: *εἰ δὴ τὸν ἀριθμὸν εἶεν ὀλίγοι πάμπαν οἱ τὴν ἀρετὴν ἔχοντες, τίνα δεῖ διελεῖν τὸν τρόπον; ἢ τὸ ὀλίγοι πρὸς τὸ ἔργον δεῖ σκοπεῖν, εἰ δυνατοὶ διοικεῖν τὴν πόλιν ἢ τοσοῦτοι τὸ πλῆθος ὥστ' εἶναι πόλιν ἐξ αὐτῶν.*

the other is more than counterbalanced.[1] The influence of individuals or classes will be in proportion to the amount which they severally contribute to the stability of the State and the attainment of its end. The end, however, must always be the good of the whole, and not the advantage of any particular class.[2] And since this object is more certainly attained under the rule of law than under that of men, who are continually subject to all kinds of weakness and passion, Aristotle differs from Plato[3] in concluding that it is better that good laws hold sway, and that magistrates be left to the freedom of their own will only in cases which laws fail to cover, owing to their necessary universality and the impossibility of taking account of every individual case that may occur. If it be objected that the law may

[1] iv. 12, 1296, b, 15: δεῖ γὰρ κρεῖττον εἶναι τὸ βουλόμενον μέρος τῆς πόλεως τοῦ μὴ βουλομένου μένειν τὴν πολιτείαν. [So v. 9, 1309, b, 16.] ἔστι δὲ πᾶσα πόλις ἔκ τε τοῦ ποιοῦ καὶ τοῦ ποσοῦ. λέγω δὲ ποιὸν μὲν ἐλευθερίαν πλοῦτον παιδείαν εὐγένειαν, ποσὸν δὲ τὴν τοῦ πλήθους ὑπεροχήν. ἐνδέχεται δὲ τὸ μὲν ποιὸν ὑπάρχειν ἑτέρῳ μέρει τῆς πόλεως, . . . ἄλλῳ δὲ μέρει τὸ ποσόν, οἷον πλείους τὸν ἀριθμὸν εἶναι τῶν γενναίων τοὺς ἀγεννεῖς ἢ τῶν πλουσίων τοὺς ἀπόρους, μὴ μέντοι τοσοῦτον ὑπερέχειν τῷ ποσῷ ὅσον λείπεσθαι τῷ ποιῷ. διὸ ταῦτα πρὸς ἄλληλα συγκριτέον. ὅπου μὲν οὖν ὑπερέχει τὸ τῶν ἀπόρων πλῆθος τὴν εἰρημένην ἀναλογίαν, ἐνταῦθα πέφυκεν εἶναι δημοκρατίαν, καὶ ἕκαστον εἶδος δημοκρατίας [organised or lawless, &c.] κατὰ τὴν ὑπεροχὴν τοῦ δήμου ἑκάστου [according as farmers or labourers, &c., preponderate] . . . ὅπου δὲ τὸ τῶν εὐπόρων καὶ γνωρίμων μᾶλλον ὑπερτείνει τῷ ποιῷ ἢ λείπεται τῷ ποσῷ, ἐνταῦθα δὲ ὀλιγαρχίαν, καὶ τῆς ὀλιγαρχίας τὸν αὐτὸν τρόπον ἕκαστον εἶδος κατὰ τὴν ὑπεροχὴν τοῦ ὀλιγαρχικοῦ πλήθους . . . ὅπου δὲ τὸ τῶν μέσων ὑπερτείνει πλῆθος ἢ συναμφοτέρων τῶν ἄκρων ἢ καὶ θατέρου μόνον, ἐνταῦθ' ἐνδέχεται πολιτείαν εἶναι μόνιμον.

[2] iii. 13, 1283, b, 36: Ought the legislator to look to the advantage of the better or of the greater number? τὸ δ' ὀρθὸν ληπτέον ἴσως· τὸ δ' ἴσως ὀρθὸν πρὸς τὸ τῆς πόλεως ὅλης συμφέρον καὶ πρὸς τὸ κοινὸν τὸ τῶν πολιτῶν. Hence all forms of constitution which do not aim at the general welfare are resolutely regarded as bad.

[3] Cf. *Ph. d. Gr.* i. p. 762 sq.

itself be partial, Aristotle admits that it is true; the law will be good or bad, just or unjust, according as the constitution is so, since laws everywhere correspond to the existing constitution. But the conclusion which he draws is, not that persons instead of laws should adjudicate, but that constitutions should be good.[1] The final result of all these considerations is, therefore, the demand for an order founded upon law, and aiming at the common good of all, in which influence and privilege should be assigned to individuals and classes according to their importance for the life of the whole.

We have next to consider the case in which an individual or a minority possesses personal qualities so outstanding as wholly to outweigh all the others put together in ability and political importance. Would it not be unjust to place such persons on an equal footing

[1] iii. 10: In whom shall the sovereignty reside? In the masses, the rich, the best, in some distinguished citizen, or in a tyrant? After recounting all these different views, and dismissing the third and fourth with the remark that in that case the majority of the citizens would be excluded from all political rights, Aristotle continues, 1281. a, 34: *ἀλλ' ἴσως φαίη τις ἂν τὸ κύριον ὅλως ἄνθρωπον εἶναι ἀλλὰ μὴ νόμον φαῦλον, ἔχοντά γε τὰ συμβαίνοντα πάθη περὶ τὴν ψυχήν.* He suggests, indeed, an objection: *ἂν οὖν ᾖ νόμος μὲν ὀλιγαρχικὸς δὲ ἢ δημοκρατικός, τί διοίσει περὶ τῶν ἠπορημένων; συμβήσεται γὰρ ὁμοίως* [*i.e.* as in the case of the personal rule of the rich or of the people] *τὰ λεχθέντα πρότερον.* Nevertheless he arrives finally at the conclusion (1282, b, 1): *ἡ δὲ πρώτη λεχθεῖσα ἀπορία ποιεῖ φανερὸν οὐδὲν οὕτως ἕτερον ὡς ὅτι δεῖ τοὺς νόμους εἶναι κυρίους κειμένους ὀρθῶς, τὸν ἄρχοντα δέ, ἄν τε εἷς ἄν τε πλείους ὦσι, περὶ τούτων εἶναι κυρίους περὶ ὅσων ἐξαδυνατοῦσιν οἱ νόμοι λέγειν ἀκριβῶς διὰ τὸ μὴ ῥᾴδιον εἶναι καθόλου δηλῶσαι περὶ πάντων.* But the character of the laws depends upon the constitution (*πολιτεία* in the wider sense explained p. 232 sq.): *ἀλλὰ μὴν εἰ τοῦτο, δῆλον ὅτι τοὺς μὲν κατὰ τὰς ὀρθὰς πολιτείας ἀναγκαῖον εἶναι δικαίους, τοὺς δὲ κατὰ τὰς παρεκβεβηκυίας οὐ δικαίους.* On the supremacy of law see p. 252, *infra*.

with the others, whom in every respect they so far excel? Would it not be as ridiculous as to ask the lion to enter on an alliance of equal rights with the hare? If a State will suffer no political inequality, nothing is left for it but to exclude from its pale members who thus excel the common mass. In that sense, the institution of the Ostracism is not without a certain justification: it may, under certain circumstances, be indispensable to the safety of the democracy. In itself, however, it is wholly unjust, and, as a matter of fact, was abused for party ends. The true solution is to regard men of decisive superiority, not as mere members, but as the destined rulers of the State, not as under the law, but as themselves the law. They dwell among men like gods—you can as little rule over them or divide the power with them as you can divide the sovereignty of Jove. Only one attitude is possible towards them—namely, voluntary subjection. They are the natural, born kings;[1] they

[1] iii. 13, 1284, a, 3: εἰ δέ τις ἔστιν εἷς τοσοῦτον διαφέρων κατ' ἀρετῆς ὑπερβολὴν, ἢ πλείους μὲν ἑνὸς μὴ μέντοι δυνατοὶ πλήρωμα παρασχέσθαι πόλεως, ὥστε μὴ συμβλητὴν εἶναι τὴν τῶν ἄλλων ἀρετὴν πάντων μηδὲ τὴν δύναμιν αὐτῶν τὴν πολιτικὴν πρὸς τὴν ἐκείνων, εἰ πλείους, εἰ δ' εἷς, τὴν ἐκείνου μόνον, οὐκέτι θετέον τούτους μέρος πόλεως· ἀδικήσονται γὰρ ἀξιούμενοι τῶν ἴσων, ἄνισοι τοσοῦτον κατ' ἀρετὴν ὄντες καὶ τὴν πολιτικὴν δύναμιν· ὥσπερ γὰρ θεὸν ἐν ἀνθρώποις εἰκὸς εἶναι τὸν τοιοῦτον· ὅθεν δῆλον ὅτι καὶ τὴν νομοθεσίαν ἀναγκαῖον εἶναι περὶ τοὺς ἴσους καὶ τῷ γένει καὶ τῇ δυνάμει. κατὰ δὲ τῶν τοιούτων οὐκ ἔστι νόμος· αὐτοὶ γάρ εἰσι νόμος. And then follows the discussion in the text above, after which Aristotle continues, 1284, b, 25: ἀλλ' ἐπὶ τῆς ἀρίστης πολιτείας ἔχει πολλὴν ἀπορίαν, οὐ κατὰ τῶν ἄλλων ἀγαθῶν τὴν ὑπεροχὴν, οἷον ἰσχύος καὶ πλούτου καὶ πολυφιλίας, ἀλλ' ἄν τις γένηται διαφέρων κατ' ἀρετὴν, τί χρὴ ποιεῖν; οὐ γὰρ δὴ φαῖεν ἂν δεῖν ἐκβάλλειν καὶ μεθιστάναι τὸν τοιοῦτον. ἀλλὰ μὴν οὐδ' ἄρχειν γε τοῦ τοιούτου· παραπλήσιον γὰρ κἂν εἰ τοῦ Διὸς ἄρχειν ἀξιοῖεν, μερίζοντες τὰς ἀρχάς. λείπεται τοίνυν, ὅπερ ἔοικε πεφυκέναι, πείθεσθαι τῷ τοιούτῳ πάντας ἀσμένως, ὥστε βασιλέας εἶναι τοὺς τοιούτους ἀϊδίους ἐν ταῖς πόλεσιν. Similarly c. 17, 1288, a, 15 sqq.

alone have a true and unconditional title to monarchy.[1] Such a monarchy Aristotle calls the best of all constitutions,[2] believing as he does that under it the well-being of the people is best secured; for he alone is king in this high sense who is endowed with every excellence and free from every mortal defect; nor will such a one seek his own advantage at the cost of his subjects, but, like a god, will lavish upon them benefits out of his own abundance.[3] In general, however, Aristotle is no eulogist of monarchy. The different kinds of it which he enumerates,[4] he regards as mere varieties of two fundamental forms—namely, military command

[1] Cf. iii. 17, 1281, b, 41 sqq.

[2] *Eth.* viii. 12, 1160, a, 35: τούτων δὲ [of the true forms of constitution] βελτίστη μὲν ἡ βασιλεία χειρίστη δ' ἡ τιμοκρατία.

[3] *Ibid.* b, 2: ὁ μὲν γὰρ τύραννος τὸ ἑαυτῷ συμφέρον σκοπεῖ, ὁ δὲ βασιλεὺς τὸ τῶν ἀρχομένων. οὐ γάρ ἐστι βασιλεὺς ὁ μὴ αὐτάρκης καὶ πᾶσι τοῖς ἀγαθοῖς ὑπερέχων. ὁ δὲ τοιοῦτος οὐδενὸς προσδεῖται· τὰ ὠφέλιμα οὖν αὑτῷ μὲν οὐκ ἂν σκοποίη, τοῖς δ' ἀρχομένοις· ὁ γὰρ μὴ τοιοῦτος κληρωτὸς ἄν τις εἴη βασιλεύς. Cf. p. 250, n. 1, *supra*.

[4] In the section περὶ βασιλείας, which Aristotle inserts iii. 14–17, and which, as it is closely connected with the preceding discussion, we must here notice. Besides true monarchy he there enumerates five kinds of monarchical rule: (1) that of the heroic age; (2) that which is common among barbarians; (3) the rule of the so-called Æsymnetæ or elective princes; (4) the Spartan; (5) unlimited monarchy (παμβασιλεία, c. 16 1287 a, 8). The first of these kinds, he remarks (c. 14, 1285, b, 3 sqq., 20 sqq., a, 7, 14), was rather a union of certain offices, judicial, priestly, military; similarly, the Spartan was an hereditary command. The monarchy of the barbarians, on the other hand, is an hereditary mastership (ἀρχὴ δεσποτική—but the government of slaves is despotic, that of freemen political; *Polit.* iii. 4, 1277, a, 33, b, 7, c. 6, 1278, b, 32, 1279, a, 8), to which, however, the subjects voluntarily submit, and which is limited by traditional usage (iii. 14, 1285, a, 16, b, 23). Elective monarchy is a dictatorship either for life or for a definite time or object. (On the αἱρετὴ τυραννὶς *v. ibid.* a, 29 sqq. b, 25.) Only in an irresponsible monarchy is an individual actually master of a whole people; it is a kind of magnified domestic rule: ὥσπερ γὰρ ἡ οἰκονομικὴ βασιλεία τις οἰκίας ἐστὶν, οὕτως ἡ βασιλεία πόλεως καὶ ἔθνους ἑνὸς ἢ πλειόνων οἰκονομία (*ibid.* b, 29 sqq.).

for life and irresponsible sovereignty. The former, however, is applicable to the most diverse forms of constitution, and cannot, therefore, be the fundamental characteristic of any one of them. By a monarchical constitution, therefore, in the present inquiry, we can only mean irresponsible monarchy.[1] But against this form of government there are, according to Aristotle, many objections. That it may, under certain circumstances, be natural and justifiable he does not, indeed, deny. A people which is incapable of governing itself must needs have a governor. In such a case government by one is just and salutary.[2] If, on the other hand, the case be one of a people consisting of freemen who stand to one another in a relation of essential equality, personal rule contradicts the natural law, which assigns equal rights to equals; in such States the only just arrangement is that power should alternate; but where this is the case it is law, and not the will of a monarch, that rules.[3] If, further, it be said that government by the best man is better than government by the best laws, because the latter issue only universal decrees without regard to the peculiarities of particular cases, we must remember, in the first place, that even the individual must be guided by universal principles

[1] iii. 15, 1286, b, 33–1287, a, 7, c. 16 *init.*

[2] iii. 17 *init.*, after stating the objections to monarchy Aristotle continues: *ἀλλ' ἴσως ταῦτ' ἐπὶ μέν τινων ἔχει τὸν τρόπον τοῦτον, ἐπὶ δέ τινων οὐχ οὕτως. ἔστι γάρ τι φύσει δεσποστὸν καὶ ἄλλο βασιλευτὸν καὶ ἄλλο πολιτικὸν καὶ δίκαιον καὶ συμφέρον.* c. 14, 1285, a, 19: monarchical power is as unlimited among some barbarian peoples as tyrannical. Nevertheless it is legitimate (*κατὰ νόμον καὶ πατρικὴ*); *διὰ γὰρ τὸ δουλικώτεροι εἶναι τὰ ἤθη φύσει οἱ μὲν βάρβαροι τῶν Ἑλλήνων, οἱ δὲ περὶ τὴν Ἀσίαν τῶν περὶ τὴν Εὐρώπην, ὑπομένουσι τὴν δεσποτικὴν ἀρχὴν οὐδὲν δυσχεραίνοντες.* Cf. p. 239, n. 1, *sup.*

[3] iii. 16, 1287, a, 8 sqq. cf. c. 17, 1288, a, 12, c. 15, 1286, a, 36.

of government, and that it is better that these should be administered in their purity than that they should be obscured by distorting influences. Law is free from such influences, whereas every human soul is exposed to the disturbing influence of passion; law is reason without desire. Where law reigns, God reigns incarnate; where the individual, the beast reigns as well.[1] If this advantage seems to be again outweighed by the inability of law to take account of particular cases as the individual governor can, this is not decisive. It follows, indeed, from it that the constitution must admit of an improvement upon the laws[2]—that the cases which the law does not take account of must be submitted to authoritative judges and magistrates, and that provision should be made by means of a special education for a constant supply of men, to whom these

[1] iii. 15, 1286, a, 7–20, c. 16, 1287, a, 28: ὁ μὲν οὖν τὸν νόμον κελεύων ἄρχειν δοκεῖ κελεύειν ἄρχειν τὸν θεὸν καὶ τὸν νοῦν μόνους, ὁ δ' ἄνθρωπον κελεύων προστίθησι καὶ θηρίον. ἥ τε γὰρ ἐπιθυμία τοιοῦτον [perhaps better: τοιοῦτον ὂν] καὶ ὁ θυμὸς ἄρχοντας διαστρέφει καὶ τοὺς ἀρίστους ἄνδρας. διόπερ ἄνευ ὀρέξεως νοῦς ὁ νόμος ἐστίν. Cf. p. 248 sq. vi. 4, 1318, b, 39: ἡ γὰρ ἐξουσία τοῦ πράττειν ὅ τι ἂν ἐθέλῃ τις οὐ δύναται φυλάττειν τὸ ἐν ἑκάστῳ τῶν ἀνθρώπων φαῦλον. *Eth.* v. 10, 1134, a, 35: διὸ οὐκ ἐῶμεν ἄρχειν ἄνθρωπον, ἀλλὰ τὸν λόγον [*al.* νόμον], ὅτι ἑαυτῷ τοῦτο ποιεῖ καὶ γίνεται τύραννος.

[2] Aristotle touches on this point, ii. 8, 1268, b, 31 sqq. He there says that neither the written nor the unwritten laws can be unchangeable. Government, like all other arts and sciences, reaches perfection gradually. From the earliest inhabitants of a country, whether they be autochthonous or a remnant of a more ancient population, little insight is to be expected: it would be absurd, therefore, to be bound by their precedents; written laws, moreover, cannot embrace every individual case. Nevertheless great prudence is required in changing the laws; the authority of the law rests entirely on use and wont, and this ought not to be infringed unnecessarily; men ought to put up with small anomalies rather than injure the authority of the law and the government and accustom the citizens to regard legislative changes lightly.

functions may be entrusted; but it does not by any means follow that the highest authority in the State should reside in an individual. On the contrary, the more undeniable it is that many are superior to one, that the latter is more liable to be fooled by passion and corrupted by desire than a multitude, and that even the monarch cannot dispense with a multitude of servants and assistants, the wiser it is to commit this authority into the hands of the whole people and cause it to be exercised by them, rather than by an individual[1] —assuming always that the people consist of free and capable men.[2] Furthermore, we cannot overlook the fact that use and custom are more powerful than written laws, and that government by these at any rate has the advantage over government by a man, even although we deny this of written law.[3] A monarch, finally (and this argument weighs heavily with Aristotle), will almost inevitably desire to make his sovereignty hereditary in his family; and what guarantee have we in such a case

[1] C. 15, 1286, a, 20–b, 1, c. 16, 1287, a, 20–b, 35; cf. p. 246, n. 2, *supra*. *Rhet.* i. 1, 1354, a, 31: it is best that as much as possible cases should be decided by law and withdrawn from judicial consideration; for (1) true insight is more likely to be found in the individual or the select few who make a law than in the many who have to apply it; (2) laws are the product of mature deliberation, judicial decisions of the moment; (3) the most important consideration of all: the legislator establishes universal principles for the future, law courts and popular assemblies decide upon a special case, in which inclination, aversion and private advantage not unfrequently play a part. To these, therefore, we must leave, when possible, only such questions as refer to matters of fact—past or future.

[2] *Ibid.* 1286, a, 35: *ἔστω δὲ τὸ πλῆθος οἱ ἐλεύθεροι, μηδὲν παρὰ τὸν νόμον πράττοντες, ἀλλ' ἢ περὶ ὧν ἐκλείπειν ἀναγκαῖον αὐτόν.* We are dealing with *ἀγαθοὶ καὶ ἄνδρες καὶ πολῖται.* To the further objection that in large masses factions commonly arise, the reply is made: *ὅτι σπουδαῖοι τὴν ψυχὴν, ὥσπερ κἀκεῖνος ὁ εἷς.*

[3] c. 16, 1287, b, 5.

that it will not pass into the most unworthy hands, to the ruin of the whole people?[1] On all these grounds Aristotle declares it to be better that the State be ruled by a capable body of citizens than by an individual: in other words, he gives 'aristocracy' the preference over 'monarchy.'[2] Only in two cases does he regard the latter, as we have seen, as justified: when a people stands so low as to be incapable of self-government, or when an individual stands so pre-eminently out over all others that they are forced to revere him as their natural ruler. Of the former, he could not fail to find many instances in actual experience; he himself, for instance, explains the Asiatic despotisms on this principle. Of the latter, neither his own time nor the whole history of his nation afforded him any example corresponding even remotely to the description, except that of his own pupil Alexander.[3] The thought naturally suggests itself that he had him in his mind when he describes the prince whose personal superiority makes him a born ruler.[4] Conversely, we can imagine that he used his ideal of the true king (if he had sketched it at so early a period as his residence in Macedonia[5]) as a means of directing to beneficial ends a power which would endure

[1] c. 15, 1286, b, 22.

[2] c. 15, 1286, b, 3: *εἰ δὴ τὴν μὲν τῶν πλειόνων ἀρχὴν ἀγαθῶν δ' ἀνδρῶν πάντων ἀριστοκρατίαν θετέον, τὴν δὲ τοῦ ἑνὸς βασιλείαν, αἱρετωτερον ἂν εἴη πόλεσιν ἀριστοκρατία βασιλείας.* Accordingly early monarchies have changed into republics as the number of capable people in the cities has increased.

[3] Pericles alone might perhaps have been mentioned alongside of him; he was, however, not a monarch, but a popular leader, and in *Polit.* ii. 12, 1274, a, 5 sqq. is treated merely as a demagogue.

[4] See ONCKEN, *Staatsl. d. Arist.* ii. 268 sq.

[5] He dedicated a treatise to Alexander *περὶ βασιλείας*; see p. 60, n. 1.

no opposition and no limitation, and of saying to a prince whose egotism would admit no title by the side of his own that absolute monarchy can only be merited by an equally absolute moral greatness. These speculations, however, are delusive. Aristotle himself remarks that no one any longer exists so far superior to all others as the true king must needs be.[1] Moreover, throughout the *Politics* he accepts the presuppositions of Greek national and political life, and it is not likely that in his theory of monarchy he should have had the Macedonian Empire, whose origin, like that ot other peoples, he elsewhere traces to definite historical sources,[2] present to his thought.[3] It is better to explain

[1] v. 10, 1313, a, 3: *οὐ γίγνονται δ' ἔτι βασιλεῖαι νῦν, ἀλλ' ἄνπερ γίγνωνται, μοναρχίαι καὶ τυραννίδες μᾶλλον, διὰ τὸ τὴν βασιλείαν ἑκούσιον μὲν ἀρχὴν εἶναι, μειζόνων δὲ κυρίαν, πολλοὺς δ' εἶναι τοὺς ὁμοίους, καὶ μηδένα διαφέροντα τοσοῦτον ὥστε ἀπαρτίζειν πρὸς τὸ μέγεθος καὶ τὸ ἀξίωμα τῆς ἀρχῆς. ὥστε διὰ μὲν τοῦτο ἑκόντες οὐχ ὑπομένουσιν· ἂν δὲ δι' ἀπάτης ἄρξῃ τις ἢ βίας, ἤδη δοκεῖ τοῦτο εἶναι τυραννίς.* This does not, indeed, primarily refer to the appearance in a state previously monarchical of a prince whose personality corresponds to that of the ideal king, but to the introduction of monarchy in states which hitherto have had another form of constitution; the words *μηδένα ... ἀρχῆς* seem, however, to show that Aristotle in depicting the true king was not thinking of contemporary examples. Had he desired historical illustrations he would have preferred to look for them in mythical times—perhaps in a Theseus—seeing that in iii. 15, 1286, a, 8 he supposes that monarchy is the oldest form of constitution, perhaps because the few capable people in antiquity stood more prominently out above the common man than in later times.

[2] *Polit.* v. 10, 1310, b, 39, where the Macedonian kings are mentioned along with the Spartan and Molossian as owing their position to their services as founders of states.

[3] Even although the passage vii. 7 (see *infra*) were taken to mean that the Greek nation now that it has become politically united (strictly speaking it had not received *μίαν πολιτείαν* even from Philip and Alexander) is able to rule the world, and not merely that 'it would be able to rule the world if it were politically united,' it could not be quoted in proof of the view that Aristotle (as ONCKEN, *Staatsl. d.*

his views on this subject upon purely scientific principles. Among the different possible cases in which virtue may be the basis of political life, he had to take account of that in which the virtue resides primarily in the prince, and in which his spirit, passing into the community, confers upon it that prowess which he himself possesses. It would certainly not be difficult to prove from Aristotle's own statements about the weakness of human nature and the defects of absolute monarchy that such a case can never actually occur, that even the greatest and ablest man differs from a god, and that no personal greatness in a ruler can compensate for the legally organised co-operation of a free people, or can constitute a claim to unlimited command over free men. Determined, however, though Aristotle usually is in his hostility to all false idealism, and careful though he is in the *Politics* to keep clearly in view the conditions of reality, he has here been unable wholly to rid himself of idealistic bias. He admits that the advent of a man who has a natural claim to sole supremacy is a rare exception; but he does not regard it as an impossibility, and accordingly considers it his duty not to overlook this case in the development of his theory.[1]

After thus discussing the principles of his division of states into their various kinds, Aristotle next proceeds to investigate the separate forms themselves, beginning with the best, and passing from it to the

*Arist.* i. 21, supposes) saw in its unity under the Macedonian sway the fulfilment of his people's destiny. Cf. SUSEMIHL, *Jahrb. f. Philol.* ciii. 134 sq. HENKEL, *Studien*, &c., p. 97.

[1] SUSEMIHL, *Jahresber. über class. Alterthumsw.*, 1875, p. 377, takes the same view.

less perfect examples. The examination of the 'Best State,' however, as already observed, is incomplete. We must therefore be content to notice the section of it which we have before us.

### 5. *The Best State* [1]

For a perfect society certain natural conditions are in the first place necessary; for just as each art requires a suitable material to work upon, so also does political science. A community cannot, any more than an individual, dispense with external equipment as the condition of complete happiness.[2] A State, in the first

[1] It has been frequently denied that Aristotle intended to depict an Ideal State (see HILDENBRAND, *ibid.* p. 427 sqq. HENKEL, *ibid.* 74); his own declarations, however, as is gradually coming to be generally admitted, leave no doubt on this head. Cf. *e.g.* iii. 18 *fin.* vii. 1 *init.* c. 2, 1324, a, 18, 23, c. 4 *init.* c. 9, 1328, b, 33, c. 13 *init.* c. 15 *init.* iv. 2, 1289, a, 30. The subject of the discussion in *Polit.* vii. and viii. is described by all these passages without exception as the *ἀρίστη πολιτεία*, the *πόλις μέλλουσα κατ' εὐχὴν συνεστάναι*, and Aristotle expressly says that in depicting such a State many assumptions must be made, but these ought not to transcend the limits of possibility. This, however, is precisely what Plato also had asserted of the presuppositions of his ideal state (*Rep.* v. 473, c. vi. 499 C, D,502 C; see *Ph. d. Gr.* i. p. 776), and so small is the difference in this respect between them that, while Plato declares *μὴ παντάπασιν ἡμᾶς εὐχὰς εἰρηκέναι, ἀλλὰ χαλεπὰ μὲν δυνατὰ δέ πῃ* (*Rep.* vii, 540 D), Aristotle says, conversely (vii. 4, 1325, b, 38, and almost in the same words ii. 6, 1265, a,17): *δεῖ πολλὰ προϋποτεθεῖσθαι καθάπερ εὐχομένους, εἶναι μέντοι μηθὲν τούτων ἀδύνατον.* Aristotle certainly declares the most peculiar of Plato's proposals to be unsuitable and impracticable; he is moreover not so entranced with his Ideal State as to deny, as Plato does, to any other the name of State and to permit to the philosopher alone a share in its administration; he demands of political science that it should study also the less perfect conditions of actuality and ascertain what is best in the circumstances; but at the same time he doubted as little as Plato that *Politics* ought also to sketch the ideal of a perfect State.

[2] *Polit.* vii. 4 *init.*

place, must be neither too small nor too great: since if it is too small it will lack independence; if too great, unity. The true measure of its proportions is that the number of the citizens should, on the one hand, suffice for all wants, and, on the other, be sufficiently within a compass to keep the individual members intimately acquainted with one another and with the government.[1] Aristotle further desires a fruitful country of sufficient extent, which itself supplies all the necessities of life without leading to luxury, and which is easily defended and suitable for purposes of commerce. In this last respect he defends, as against Plato,[2] a maritime situation, prescribing at the same time means of avoiding the inconveniences which it may bring with it.[3] More important still, however, is the natural character of the people. A healthy community can only exist where the people combine the complementary qualities of spirit and intellect. Aristotle agrees with Plato in holding that this is so among the Greeks alone. The Northern barbarians, on the other hand, with their un-

[1] *Ibid.* 1326, b, 5 sqq. where at the end Aristotle says: *δῆλον τοίνυν ὡς οὗτός ἐστι πόλεως ὅρος ἄριστος, ἡ μεγίστη τοῦ πλήθους ὑπερβολὴ πρὸς αὐτάρκειαν ζωῆς εὐσύνοπτος.* At the same time he maintains that the general criterion of the size of a state is, not the *πλῆθος*, but the *δύναμις* of its population, that the greatest is that which is best capable of answering the peculiar ends of the state, and that accordingly we have to take into account the number, not of the population, but of the citizens proper: *οὐ γὰρ ταὐτὸν μεγάλη τε πόλις καὶ πολυάνθρωπος.* Cf. *Eth.* ix. 10, 1170, b, 31: *οὔτε γὰρ ἐκ δέκα ἀνθρώπων γένοιτ' ἂν πόλις οὔτ' ἐκ δέκα μυριάδων ἔτι πόλις ἐστίν*—we shall not consider the latter too low an estimate if we have in view the Greek states in which all full citizens share directly in the government (cf. *Polit. ibid.* 1326, b, 6).

[2] *Laws*, iv. *init.*; this passage is, undoubtedly present to Aristotle's mind, although he makes no mention either of it or of its author.

[3] *Polit.* vii. 5.

tamed spirit, may attain to freedom, but not to political existence; while the Asiatics, with all their art and talent, are cowards, and destined by nature to be slaves.[1] The Greeks alone are capable of political activity, for they alone are endowed with that sense of moral proportion which fortifies them on all sides from extremes of excess or defect. The conditions of all civil and moral life Aristotle, in a true Greek spirit, finds to exist only in his own people. Here, also, where it is more justifiable in view of the intellectual state of the world at that time, we have the same national pride which has already presented itself in a more repulsive aspect in the discussion upon Slavery.

So far we have spoken only of such things as depend upon chance. The most important of all, however, and that which constitutes the essential element in the happiness of the state, is the virtue of the citizens, which is no longer a matter of chance, but of free will and insight.[2] Here, therefore, we must call upon political science to be our guide. In the first place we shall have to determine by its aid how best to take advantage of the external circumstances. Under this head comes all that Aristotle says of the division of the land, and of the site and structure of the city. With

[1] *Polit.* vii. 7, where he says of the Greeks (1327, b, 29): *τὸ δὲ τῶν Ἑλλήνων γένος ὥσπερ μεσεύει κατὰ τοὺς τόπους, οὕτως ἀμφοῖν μετέχει, καὶ γὰρ ἔνθυμον καὶ διανοητικόν ἐστιν, διόπερ ἐλεύθερόν τε διατελεῖ καὶ μάλιστα πολιτευόμενον καὶ δυνάμενον ἄρχειν πάντων μιᾶς τυγχάνον πολιτείας* (on which see p. 256, n. 1); cf. PLATO, *Rep.* iv. 435 E, ii. 374 E sqq. to the latter of which passages Aristotle himself refers.

[2] *Polit.* vii. 13, 1332, a, 29: *διὸ κατ' εὐχὴν εὐχόμεθα τὴν τῆς πόλεως σύστασιν, ὧν ἡ τύχη κυρία· κυρίαν γὰρ αὐτὴν ὑπάρχειν τίθεμεν· τὸ δὲ σπουδαίαν εἶναι τὴν πόλιν οὐκέτι τύχης ἔργον, ἀλλ' ἐπιστήμης καὶ προαιρέσεως.* Cf. c. 1, 1323, b, 13, and the whole chapter.

reference to the first of these he proposes[1] that a portion of the whole territory be set apart as state property, from the produce of which the cost of religious services and public banquets may be defrayed, and that of what remains each citizen should receive two portions, one in the neighbourhood of the city, another towards the boundary of its territory.[2] He requires for the city not only a healthy site and suitable plan of structure, but also fortifications, deprecating upon valid grounds[3] the contempt with which Plato[4] and the Spartans regarded the latter. Of much greater importance, however, are the means that must be adopted to secure the personal capacity of the citizens. These will not in the most perfect sort of state consist merely in educating men with a view to a particular form of constitution and to their own particular aims, nor again in making them efficient as a community, although imperfect as individuals; on the contrary, since the virtue of citizens here coincides with the virtue of man universally, care must be taken to make each and every citizen a capable man, and to fit all for taking part in the government of the state.[5] But for this end three things are necessary. The ultimate aim of human existence is the education of the reason.[6] As the higher is always preceded by the lower, the end by the means, in the order of time,[7] so the education of the reason must be preceded by

[1] *Ibid.* c. 10, 1329, b, 36 sqq.

[2] There is a similar plan in PLATO, *Laws*, 745 C sqq.; Aristotle, however, in *Polit.* ii. 6, 1265, b, 24, considers Plato's arrangement, merely on account of a trifling difference, highly objectionable.

[3] *Polit.* vii. 11, 12.

[4] *Laws*, vi. 778 D sq.

[5] See vol. ii. p. 209, n. 2, *sup.*

[6] Cf. p. 142 sq. and *Polit.* vii. 15, 1334, b. 14: *ὁ δὲ λόγος ἡμῖν καὶ ὁ νοῦς τῆς φύσεως τέλος. ὥστε πρὸς τούτους τὴν γένεσιν καὶ τὴν τῶν ἐθῶν δεῖ παρασκευάζειν μελέτην.*

[7] Cf. vol. ii. p. 28, n. 3, *supra.*

that of the irrational element of the soul—namely, desire—and the training of desire by that of the body. We must therefore have first a physical, secondly a moral, and lastly a philosophic training; and just as the nurture of the body must subserve the soul, so must the education of the appetitive part subserve the reason.[1]

Aristotle, like Plato, demands that state interference with the life of the individual should begin much earlier than is customary in our days, and that it should regulate even the procreation of children. He does not, indeed, as has been already shown,[2] go so far as to make this act the mere fulfilment of official orders, as Plato had done in the *Republic*. Nevertheless he also would have laws to regulate the age at which marriage should take place and children be begotten,[3] careful regard being paid to the consequences involved not only to the children in relation to their parents, but to the parents in relation to one another. The law must even determine at what season of the year and during what winds procreation may take place. It must prescribe the proper course of treatment for pregnant women, procure the exposure of deformed children, and regulate the number of births. For those children who are superfluous, or whose parents are either too young or too old, Aristotle, sharing

[1] *Polit.* vii. 15, 1334, b, 20: ὥσπερ δὲ τὸ σῶμα πρότερον τῇ γενέσει τῆς ψυχῆς, οὕτω καὶ τὸ ἄλογον τοῦ λόγον ἔχοντος . . . διὸ πρῶτον μὲν τοῦ σώματος τὴν ἐπιμέλειαν ἀναγκαῖον προτέραν εἶναι ἢ τὴν τῆς ψυχῆς, ἔπειτα τὴν τῆς ὀρέξεως, ἕνεκα μέντοι τοῦ νοῦ τὴν τῆς ὀρέξεως, τὴν δὲ τοῦ σώματος τῆς ψυχῆς. Cf. viii. 3 *fin.* On reason and desire, *v.* vol. ii. pp. 112 sq., 155 sq. *supra*. [*supra*.

[2] In the section on the Family,

[3] Marriage ought to take place with men about the age of thirty-seven, with women about eighteen; procreation ought not to be continued beyond the fifty-fourth or fifty-fifth year of a man's age.

as he does the indifference of ancients in general as to such immoral practices, roundly recommends abortion, justifying it on the ground that what has as yet no life, has no rights.[1] From the control of procreation Aristotle passes to education, which he regards as beginning with the first moment of life, and extending to the last.[2] From the earliest years of its life care must be taken to secure for the child, not only suitable exercise and physical training, but also games and stories as a preparation for its moral education. Children must be left as little as possible to the society of slaves, and kept altogether out of the way of improper conversation and pictures, which, indeed, ought not to be tolerated at all.[3] Their public education begins at the age of seven, and lasts till twenty-one.[4] Aristotle founds his argument in favour of state-regulated education upon its importance for the communal life, for it is the moral quality of the citizens which supports the fabric and determines the character of the commonwealth; and if a man would practise virtue in the state, he must begin early to acquire it.[5] As in the best state all must be equally capable, as the whole state has one common object in view, and as no man belongs to himself, but all belong to the state, this education

[1] All this is treated of in *Polit.* vii. 16.

[2] With what follows cf. LEFMANN, *De Arist. Hom. Educatione Princ.* Berl. 1864; BIEHL, *Die Erziehungslehre d. Arist.* Gymn.-Progr. Innsbruck, 1877. For other literature on the subject, see UEBERWEG, *Hist. of Phil.* vol. i. p. 172 Eng. Tr.

[3] vii. 17.

[4] *Ibid.* 1336, b, 35 sqq.

[5] *Polit.* viii. 1 *init.*, where *inter alia*: τὸ γὰρ ἦθος τῆς πολιτείας ἑκάστης τὸ οἰκεῖον καὶ φυλάττειν εἴωθε τὴν πολιτείαν καὶ καθίστησιν ἐξ ἀρχῆς, οἷον τὸ μὲν δημοκρατικὸν δημοκρατίαν, τὸ δ' ὀλιγαρχικὸν ὀλιγαρχίαν· ἀεὶ δὲ τὸ βέλτιστον ἦθος βελτίονος αἴτιον πολιτείας. Cf. v. 9, 1310, a, 12, and vol. ii. p. 209, n. 2, *supra*.

must be wholly in common and must be regulated in every detail with a view to the wants of the whole.[1] Its one object, therefore, must be to train up men who shall know how to practise the virtue of freemen. The same principle will determine the subjects of instruction and the method of their treatment. Thus of the arts which serve the wants of life, the future citizens shall learn only those which are worthy of a free man, and which vulgarise neither mind nor body,[2] such as reading, writing, and drawing, the last of which, besides its practical utility, possesses the higher merit of training the eye for the study of physical beauty.[3] But even among those arts which belong to a liberal education in the stricter sense, there is an essential difference between those which we learn for the sake of their practical application and those which we learn for

[1] *Ibid.* 1337, a, 21 sqq.; cf. p. 209. n. 2. Aristotle recognises, indeed (*Eth.* x. 10, 1180, b, 7), that private education may be able more readily to adapt itself to the needs of the pupil, but replies that public education does not necessarily neglect these, provided that it is entrusted to the proper hands.

[2] viii. 2, 1337, b, 4: *ὅτι μὲν οὖν τὰ ἀναγκαῖα δεῖ διδάσκεσθαι τῶν χρησίμων, οὐκ ἄδηλον· ὅτι δὲ οὐ πάντα, διῃρημένων τῶν τε ἐλευθέρων ἔργων καὶ τῶν ἀνελευθέρων, φανερὸν ὅτι τῶν τοιούτων δεῖ μετέχειν ὅσα τῶν χρησίμων ποιήσει τὸν μετέχοντα μὴ βάναυσον. βάναυσον δ' ἔργον εἶναι δεῖ τοῦτο νομίζειν καὶ τέχνην ταύτην καὶ μάθησιν, ὅσαι πρὸς τὰς χρήσεις καὶ τὰς πράξεις τὰς τῆς ἀρετῆς ἄχρηστον ἀπεργάζονται τὸ σῶμα τῶν ἐλευθέρων ἢ τὴν ψυχὴν ἢ τὴν διάνοιαν.* Aristotle agrees with Plato (cf. *Ph. d. Gr.* i. p. 754) in regarding this as the effect of trades (*μισθαρνικαὶ ἐργασίαι*) generally; they leave thought unexercised and generate low views. These, however, are to be found even with the higher activities (music, gymnastics, &c.) if these are pursued in a one-sided way as a vocation. There are many things, finally, that a man may do for himself or a friend, or for some good purpose, but not in the service of strangers.

[3] viii. 3, 1337, b, 23, 1338, a, 13 sqq. *Ibid.* l. 37: among the useful arts are many which must be learned, not merely for the sake of their utility, but also as aids to further culture. Such are *γραμματική* and *γραφική*. The chief value of the latter is *ὅτι ποιεῖ θεωρητικὸν τοῦ περὶ τὰ σώματα κάλλους.*

their own sake. The former have their end outside of themselves in something attained by their means, while the latter find it within themselves, in the high and satisfying activities which their own exercise affords. That the latter are the higher, that they are the only truly liberal arts, hardly requires proof in Aristotle's view.[1] As, moreover, of the two chief branches of education among the Greeks—music and gymnastics—the latter is practised more as an aid to soldierly efficiency, while the former directly ministers to mental culture, it is not wonderful that he should disapprove of that one-sided preference for physical training which was the basis of the Spartan system of education. He remarks that where physical exercise and endurance are made so exclusively an object, a ferocity is produced which differs widely from true bravery; nor do these means suffice for the attainment even of the object sought—viz. superiority in war: for since Sparta had

[1] Besides what is said *sup.* ii. p. 141 sqq., on the superiority of theory to practice, and, p. 209 sq., on peaceful and warlike avocations, cf. on this head vii. 14, 1333, a, 35: [ἀνάγκη] *πόλεμον μὲν εἰρήνης χάριν, ἀσχολίαν δὲ σχολῆς, τὰ δ' ἀναγκαῖα καὶ χρήσιμα τῶν καλῶν ἕνεκεν.* Similarly c. 15, 1334, a, 14, viii. 3, 1337, b, 28 (on music): *νῦν μὲν γὰρ ὡς ἡδονῆς χάριν οἱ πλεῖστοι μετέχουσιν αὐτῆς· οἱ δ' ἐξ ἀρχῆς ἔταξαν ἐν παιδείᾳ, διὰ τὸ τὴν φύσιν αὐτὴν ζητεῖν . . . μὴ μόνον ἀσχολεῖν ὀρθῶς ἀλλὰ καὶ σχολάζειν δύνασθαι καλῶς . . . εἰ γὰρ ἄμφω μὲν δεῖ, μᾶλλον δὲ αἱρετὸν τὸ σχολάζειν τῆς ἀσχολίας, καὶ ὅλως ζητητέον τί ποιοῦντας δεῖ σχολάζειν.* Mere amusement (*παιδιὰ*) is not in itself an end but only a means of recreation, and accordingly more necessary in *ἀσχολία* than in *σχολή*. The latter consists in the attainment of the end, and therefore results immediately in pleasure and happiness; the former is effort after an end which is not yet attained. *ὥστε φανερὸν ὅτι δεῖ καὶ πρὸς τὴν ἐν τῇ διαγωγῇ σχολὴν μανθάνειν ἄττα καὶ παιδεύεσθαι, καὶ ταῦτα μὲν τὰ παιδεύματα καὶ ταύτας τὰς μαθήσεις ἑαυτῶν εἶναι χάριν, τὰς δὲ πρὸς τὴν ἀσχολίαν ὡς ἀναγκαίας καὶ χάριν ἄλλων. . . . ὅτι μὲν τοίνυν ἐστὶ παιδεία τις ἣν οὐχ ὡς χρησίμην παιδευτέον τοὺς υἱεῖς οὐδ' ὡς ἀναγκαίαν, ἀλλ' ὡς ἐλευθέριον καὶ καλήν, φανερόν ἐστιν.*

ceased to have a monopoly of gymnastic training, she had lost her superiority over other states. Aristotle desires, therefore, to see gymnastics duly subordinated to the true end of all education, and to prevent the more exhausting exercises from being practised before the body has acquired sufficient strength and the mind has received a counterbalancing bias from other studies.[1]

Turning to music, by which Aristotle means in the first instance music in the narrower sense of the word, in which it does not include poetry,[2] we have to distinguish between several uses to which it may be put.[3] It serves for purposes of pleasure and of moral education; it soothes the spirit,[4] and furnishes an enjoyable occupation.[5] In the education of youth, however, its ethical effect is the main thing. The young are too

[1] viii. 4, especially 1338, b, 17: *οὔτε γὰρ ἐν τοῖς ἄλλοις ζῴοις οὔτ' ἐπὶ τῶν ἐθνῶν ὁρῶμεν τὴν ἀνδρίαν ἀκολουθοῦσαν τοῖς ἀγριωτάτοις, ἀλλὰ μᾶλλον τοῖς ἡμερωτέροις καὶ λεοντώδεσιν ἤθεσιν . . . ὥστε τὸ καλὸν ἀλλ' οὐ τὸ θηριῶδες δεῖ πρωταγωνιστεῖν· οὐ γὰρ λύκος οὐδὲ τῶν ἄλλων θηρίων τι ἀγωνίσαιτο ἂν οὐθένα καλὸν κίνδυνον, ἀλλὰ μᾶλλον ἀνὴρ ἀγαθός. οἱ δὲ λίαν εἰς ταῦτα ἀνέντες τοὺς παῖδας, καὶ τῶν ἀναγκαίων ἀπαιδαγωγήτους ποιήσαντες, βαναύσους κατεργάζονται κατά γε τὸ ἀληθές, πρὸς ἕν τε μόνον ἔργον τῇ πολιτικῇ χρησίμους ποιήσαντες, καὶ πρὸς τοῦτο χεῖρον, ὥς φησιν ὁ λόγος, ἑτέρων.*

[2] PLATO, on the other hand, in the section of the *Rep.* upon musical education, deals chiefly with poetry–its form and content. See *Ph. d. Gr.* i. pp. 773, 779 sq.

[3] *Polit.* viii. 5, 1339, b, 11, c 7, 1341, b, 36.

[4] By the *κάθαρσις* which is effected, not only by sacred music (*μέλη ἐξοργιάζοντα*), but by all music; *Polit.* viii. 1342, a, 4 sqq. For the fuller discussion of *κάθαρσις*, see ch. xv. *infra*.

[5] *Διαγωγή*. By this word Aristotle means generally an activity which has its end in itself, and is therefore necessarily accompanied by pleasure, like every activity which is complete in itself (see p. 146 sq. *sup.*). He therefore makes a distinction between those arts which serve human need and those which serve *διαγωγή* (*Metaph.* i. 1 sq. 981, b, 17, 982, b, 22), comprehending under the latter all kinds of enjoyment, both nobler and humbler. In this wider sense, mere amusements can be classed as *διαγωγή* (as in *Eth.* iv. 14 *init.*

immature to practise it as an independent occupation.[1] It is well adapted, indeed, for amusement and recreation, since it affords innocent pleasure; but pleasure may not be made an end in learning, and to limit music to this would be to assign too low a place to it.[2] All the more important, on the other hand, is its influence upon character. Music more than any other art represents moral states and qualities: anger, gentleness, bravery, modesty, and every variety of virtue, vice and passion find here their expression. This representation awakens kindred feelings in the souls of the hearers.[3] We accustom ourselves to be pleased or pained by certain things, and the feelings which we have accustomed ourselves to entertain towards the imitation we are likely to entertain also towards the reality in life. But virtue consists just in this: in feeling pleasure in what is good, pain in what is bad. Music, therefore, is one of the most important means of education, all the more so because its effect upon the

x. 6, 1176, b, 12 sqq.; *Polit.* viii. 5, 1339, b, 22). In the narrower sense, however, Aristotle uses this expression for the higher activities of the kind indicated (διαγωγὴ ἐλευθέριος, *Polit.* viii. 5, 1339, b, 5). Accordingly he calls, *Eth.* ix. 11, 1171, b, 12, the society of friends, or *Metaph.* xii. 7 (p. 398, n. 5, *supra*), *Eth.* x. 7, 1177, a, 25, the active thought of the divine and the human spirit διαγωγή. In *Polit.* vii. 15, 1334, a, 16, in the discussion touched upon on p. 209 sq., he mentions σχολὴ and διαγωγὴ together, and in the passage before us, c. 5, 1339, a, 25, 29, b, 13, c. 7, 1341, b, 40, he distinguishes the application of music to purposes of παιδιὰ and ἀνάπαυσις from that πρὸς διαγωγὴν καὶ πρὸς φρόνησιν, saying (1339, b, 17) of the latter that τὸ καλὸν and ἡδονὴ are united in it. Cf. BONITZ, *Arist. Metaph.* ii. 45; *Ind. Ar.* 178, a, 33; SCHWEGLER, *Arist. Metaph.* iii. 19 sq.

[1] viii. 5, 1339, a, 29: they have no claim to διαγωγή: οὐθενὶ γὰρ ἀτελεῖ προσήκει τέλος.

[2] *Ibid.* 1339, a, 26–41, b, 14–31, 42 sqq.

[3] ἀκροώμενοι τῶν μιμήσεων γίγνονται πάντες συμπαθεῖς.

young is in no small degree strengthened by the pleasure that accompanies it.[1] These considerations determine the rules which Aristotle lays down for musical instruction. It cannot, indeed, be separated from actual practice, without which no true understanding of music can be arrived at; but since the aim of musical education is not the practice of the art itself, but only the cultivation of the musical taste, the former must be confined to the period of apprenticeship, seeing that it does not become a man to be a musician. Even in the case of children the line must not be crossed which separates the connoisseur from the professional artist.[2] To the latter, music is a trade which ministers to the taste of the uneducated masses; so it is the occupation of an artisan, enfeebling to the body and degrading to the mind. To the freeman, on the other hand, it is a means of culture and education.[3] The choice of the instruments and melodies to be used for purposes of instruction will be made with this end in view. Besides, however, the quiet and simple music which alone he would permit his citizens to practise, Aristotle authorises for public occasions a more exciting and artificial style, which may be either earnest and purifying for those who have received a liberal education, or of a less chaste description for the recreation of the lower classes and slaves.[4]

[1] *Ibid.* 1339, a, 21 sqq. 1340, a, 7–b, 19.

[2] Aristotle deprecates in general education τὰ πρὸς τοὺς ἀγῶνας τοὺς τεχνικοὺς συντείνοντα, τὰ θαυμάσια καὶ περιττὰ τῶν ἔργων, ἃ νῦν ἐλήλυθεν εἰς τοὺς ἀγῶνας, ἐκ δὲ τῶν ἀγώνων εἰς τὴν παιδείαν. c. 6, 1341, a, 10.

[3] viii. 6, 1340, b–20, 1341, a, 17, 1341, b, 8–18, c. 5, 1339, b, 8.

[4] *Ibid.* c. 6, 1341, a–b, 8, c. 7.

With these remarks the *Politics* ends, leaving even the discussion of music unfinished.[1] It is inconceivable, however, that Aristotle intended to conclude here his treatise upon education. With so keen a sense of the importance of music as an element in education, and with Plato's example before him, it is impossible that he should have overlooked that of poetry; and, indeed, he betrays his intention of discussing it in his proposal to treat 'subsequently' of comedy.[2] It is also most improbable that a man like Aristotle, who regarded the scientific activity as the highest of all, and as the most essential element in happiness, and who considered political science of such vital importance as an element in social life,[3] should have passed over in silence the whole subject of scientific training.[4] Nor could he have desired to entrust it to private effort, for he says that the whole of education must be public. Aristotle himself repeatedly indicates that after ethical, he intends to discuss intellectual culture.[5] He promises, moreover, to return to

[1] For after viii. 7 *init.* we should have had a discussion of rhythm; cf. HILDENBRAND, *ibid.* p. 453 (as opposed to NICKES, *De Arist. Polit. Libr.* p. 93).

[2] vii. 17, 1336, b, 20: *τοὺς δὲ νεωτέρους οὔτ' ἰάμβων οὔτε κωμῳδίας θεατὰς νομοθετητέον . . . ὕστερον δ' ἐπιστήσαντας δεῖ διορίσαι μᾶλλον.*

[3] See *Eth.* x. 10, 1180, a, 32, b, 20 sqq.

[4] It is the question of the education of the citizens that leads to the statement, *Polit.* vii. 14, 1333, b, 16 sqq., that theoretic activity is the highest and the aim of all the others. It must therefore be the goal and one of the most essential elements of education in the best state.

[5] *Polit.* vii. 15, 1334, b, 8: *λοιπὸν δὲ θεωρῆσαι πότερον παιδευτέοι τῷ λόγῳ πρότερον ἢ τοῖς ἔθεσιν. ταῦτα γὰρ δεῖ πρὸς ἄλληλα συμφωνεῖν συμφωνίαν τὴν ἀρίστην.* The answer is, that moral education must precede (see p. 261, *supra*); by which it is implied that a section on scientific education will follow. Several departments are spoken of, viii. 3, 1338, a, 30 sqq., as belonging to a liberal education, and it is prescribed, viii. 4, 1339, a, 4, that after entering upon manhood

the life of the family and to female education (to which he attaches the greatest importance, and the neglect of which he severely censures), and to discuss these at greater length in connection with the various forms of constitution;[1] in the text, however, as we have it, this promise is not fulfilled.[2] He further speaks of punishment as a means of education,[3] and we should accord-

young people should receive preliminary instruction for the space of three years in the other departments (μαθήματα) before the more exhausting exercise in gymnastics begins, as the two are incompatible—physical exhaustion being inimical to thought (διάνοια)—so that a place should here be assigned to the discussion of scientific instruction.

[1] *Polit.* i. 13, 1260, b, 8: περὶ δὲ ἀνδρὸς καὶ γυναικὸς καὶ τέκνων καὶ πατρὸς, τῆς τε περὶ ἕκαστον αὐτῶν ἀρετῆς, καὶ τῆς πρὸς σφᾶς αὐτοὺς ὁμιλίας, τί τὸ καλῶς καὶ μὴ καλῶς ἐστὶ, καὶ πῶς δεῖ τὸ μὲν εὖ διώκειν τὸ δὲ κακῶς φεύγειν, ἐν τοῖς περὶ τὰς πολιτείας ἀναγκαῖον ἐπελθεῖν· ἐπεὶ γὰρ οἰκία μὲν πᾶσα μέρος πόλεως, ταῦτα δ' οἰκίας, τὴν δὲ τοῦ μέρους πρὸς τὴν τοῦ ὅλου δεῖ βλέπειν ἀρετὴν, ἀναγκαῖον πρὸς τὴν πολιτείαν βλέποντας παιδεύειν καὶ τοὺς παῖδας καὶ τὰς γυναῖκας, εἴπερ τι διαφέρει πρὸς τὸ τὴν πόλιν εἶναι σπουδαίαν καὶ τοὺς παῖδας εἶναι σπουδαίους καὶ τὰς γυναῖκας σπουδαίας. ἀναγκαῖον δὲ διαφέρειν· αἱ μὲν γὰρ γυναῖκες ἥμισυ μέρος τῶν ἐλευθέρων, ἐκ δὲ τῶν παίδων οἱ κοινωνοὶ γίνονται τῆς πολιτείας. Cf. ii. 9, 1269, b, 17: ἐν ὅσαις πολιτείαις φαύλως ἔχει τὸ περὶ τὰς γυναῖκας, τὸ ἥμισυ τῆς πόλεως εἶναι δεῖ νομίζειν ἀνομοθέτητον. BRANDIS, ii. b, 1673, A, 769.

[2] For we cannot regard the occasional allusions which we find in ii. 6, 7, 9 as such a fulfilment.

[3] The measure of punishment has already been found (see end of last chap.) in the principle of corrective justice, according to which each must suffer loss in proportion to the advantage which he has unjustly usurped. The aim of punishment, on the other hand, according to Aristotle, who here agrees with Plato (*Ph. d. Gr.* i. p. 744) is chiefly to improve the culprit and deter him from further wrong-doing, but partly also, in so far as he is himself incurable, to protect society against him. Cf. *Rhet.* i. 10, 1269, b, 12: διαφέρει δὲ τιμωρία καὶ κόλασις· ἡ μὲν γὰρ κόλασις τοῦ πάσχοντος ἕνεκά ἐστιν, ἡ δὲ τιμωρία τοῦ ποιοῦντος, ἵνα ἀποπληρωθῇ. *Eth.* ii. 2; see p. 157, n. 5, *sup.* *Ibid.* x. 10, 1179, b, 28: he who lives by passion cannot be improved by mere exhortation; ὅλως τ' οὐ δοκεῖ λόγῳ ὑπείκειν τὸ πάθος ἀλλὰ βίᾳ. *Ibid.* 1180, a, 4 (cf. p. 271, n. 4, *infra*): the better kind of men, say some [*i.e.* Plato—but Aristotle himself is clearly of the same opinion], must be admonished, ἀπειθοῦσι δὲ καὶ ἀφυεστέροις οὖσι κολάσεις τε καὶ τιμωρίας ἐπιτιθέναι, τοὺς δ' ἀνιάτους ὅλως ἐξ-

ingly have expected a full discussion of its aims and application, with at least a sketch of the outlines of a system of penal justice; but in the *Politics*, as we have it, this subject is not touched upon. Similarly, questions of public economy,[1] of the treatment of slaves,[2] and of drinking habits,[3] though proposed for discussion, are left untouched; and generally it may be said the whole question of the regulation of the life of adult citizens is passed over in silence, although it is impossible to doubt that Aristotle regarded this as one of the chief problems of political science, and that, like Plato, he intended that education should be continued as a principle of moral guidance throughout the whole of life.[4] The same is true, as already remarked, of the whole question of legislation: if the *Politics* gives us little light on this

ορίζειν· τὸν μὲν γὰρ ἐπιεικῆ καὶ πρὸς τὸ καλὸν ζῶντα τῷ λόγῳ πειθαρχήσειν, τὸν δὲ φαῦλον ἡδονῆς ὀρεγόμενον λύπῃ κολάζεσθαι ὥσπερ ὑποζύγιον. *Ibid.* iii. 7, 1113, b, 23: κολάζουσι γὰρ καὶ τιμωροῦνται τοὺς δρῶντας μοχθηρὰ . . . τοὺς δὲ τὰ καλὰ πράττοντας τιμῶσιν, ὡς τοὺς μὲν προτρέψοντες, τοὺς δὲ κωλύσοντες. The aim, therefore, of punishment, unless we have to do with an incurable offender, is improvement: in the first instance, however, only that improvement of conduct which springs from the fear of punishment, not that more fundamental one of the inclinations which is effected in nobler natures by instruction and admonition: improvement, therefore, only in the sense in which it corresponds to the determent of the offender. Cf. HILDENBRAND, *ibid.* 299 sqq.

[1] περὶ κτήσεως καὶ τῆς περὶ τὴν οὐσίαν εὐπορίας πῶς δεῖ καὶ τίνα τρόπον ἔχειν πρὸς τὴν χρῆσιν αὐτήν. vii. 5, 1326, b, 32 sqq.

[2] vii. 10 *fin.*

[3] vii. 17, 1336, b, 24, where the reference to the subsequent discussions does not apply to comedy alone.

[4] Besides *Polit.* vii. 12, 1331, a, 35 sqq. c. 17, 1336, b, 8 sqq. cf. especially *Eth.* x. 10, 1180, a, 1: οὐχ ἱκανὸν δ' ἴσως νέους ὄντας τροφῆς καὶ ἐπιμελείας τυχεῖν ὀρθῆς, ἀλλ' ἐπειδὴ καὶ ἀνδρωθέντας δεῖ ἐπιτηδεύειν αὐτὰ καὶ ἐθίζεσθαι, καὶ περὶ ταῦτα δεοίμεθ' ἂν νόμων καὶ ὅλως περὶ πάντα τὸν βίον· οἱ γὰρ πολλοὶ ἀνάγκῃ μᾶλλον ἢ λόγῳ πειθαρχοῦσι καὶ ζημίαις ἢ τῷ καλῷ.

head, we must throw the blame, not upon Aristotle but upon the incomplete condition of the work.

In the completed work we should also have had a more detailed account of the constitution of the Best State. In the text before us we find only two of its characteristics described—namely. the conditions of its citizenship, and the division in it of political power. In reference to the former of these, Aristotle, like Plato, with a truly Greek contempt for physical labour, would make not only handicraft but also agriculture a disqualification for citizenship in the most perfect state. For the citizen of such a state can only be one who possesses all the attributes of a capable man; but in order to acquire these, and to devote himself to the service of the state, he requires a leisure and freedom from the lower avocations which is impossible to the husbandman, the artisan, and the labourer. Such occupations, therefore, must in the Best State be left to slaves and metœci. The citizens must direct all their energy to the defence and administration of the state; they alone, moreover, are to be the possessors of landed estates, since the national property belongs only to the citizens.[1] On the other hand, all citizens must take part in the direction of the commonwealth. This, according to Aristotle, is demanded equally by justice and necessity; since those who stand on a footing of essential equality must have equal rights, and those who possess the power will not permit themselves to be excluded from the government.[2] But since the actual

[1] vii. 9, 1328, b, 24 sqq. 1329, a, 17–26,35, c. 10, 1329, b, 36, after the Egyptian and other similar dispositions have been touched upon. Cf. p. 299, n. 4, *sup.*

[2] vii. 9, 1329, a, 9, c. 13,

administration cannot consist of the whole mass of the citizens, since there must be a difference between ruler and ruled, and since different qualities are demanded in the administrator and in the soldier—in the latter physical strength, in the former mature insight—Aristotle considers it desirable to assign different spheres to different ages: military service to the young, the duties of government, including the priestly offices, to the elders; and while thus offering to all a share in the administration, to entrust actual power only to those who are more advanced in life.[1] Such is Aristotle's account of Aristocracy.[2] In its fundamental conception as the rule of virtue and culture, it is closely related to Plato's, from which, however, it widely differs in detail; although even here the difference is one rather of social than of strictly political organisation.

1332, a, 34: *ἡμῖν δὲ πάντες οἱ πολῖται μετέχουσι τῆς πολιτείας.* c. 14, 1332, b, 12-32.

[1] vii. 9, 1329, a, 2-17, 27-34, c. 14, 1332, b, 32-1333, b, 11.

[2] iv. 7, 1293, b, 1: *ἀριστοκρατίαν μὲν οὖν καλῶς ἔχει καλεῖν περὶ ἧς διήλθομεν ἐν τοῖς πρώτοις λόγοις· τὴν γὰρ ἐκ τῶν ἀρίστων ἁπλῶς κατ' ἀρετὴν πολιτείαν, καὶ μὴ πρὸς ὑπόθεσίν τινα ἀγαθῶν ἀνδρῶν* [cf. viii. 9, 1328, b, 37], *μόνην δίκαιον προσαγορεύειν ἀριστοκρατίαν.* Cf. c. 2, 1289, a, 31. Quite consistent with this is the definition of aristocracy, iii. 1, 1279, a, 34 (see p. 237, *supra*), as the rule *τῶν ὀλίγων μὲν πλειόνων δ' ἑνὸς* in the interest of the common good, for, in the first place, Aristotle is there speaking only of common usage (*καλεῖν δ' εἰώθαμεν*), giving it at the same time as the sole ground of its right to the title that it is the rule of the best for the common good; and, secondly, in the perfect State it is always actually a minority who rule. There is therefore no ground for distinguishing between the aristocracy mentioned in iii. 7 from that which is spoken of under the same name in iv. 7 and vii. (see FECHNER, *Gerechtigkeitsbegr. d. Arist.* p. 92, n.). Still less can iii. 17 (p. 239, n. 1, *supra*) be cited in support of this distinction, inasmuch as it exactly suits the ideal State.

### 6. *Imperfect Forms of Constitution*

Besides the best constitution, there are others which, deviating from it in different ways and different degrees,[1] also call for discussion. All these, indeed, in so far as they differ from the ideal state, must be reckoned defective;[2] but this does not prevent them from having a certain conditional justification in given circumstances or form, differing from one another in the degree of their relative worth and stability. Aristotle enumerates, as we have already seen,[3] three chief forms of imperfect constitution: Democracy, Oligarchy, Tyranny; to which as he proceeds he afterwards adds as a fourth, Polity, together with several mixed forms which are akin to it.

Democracy is based upon civil equality and freedom. In order that the citizens may be equal, they must all have an equal right to share in the government; the community, therefore, must be autocratic, and a majority must decide. In order that the citizens may be free, on the other hand, everyone must have liberty to live as he pleases; no one, therefore, has the right to command another, or, so far as this is unavoidable, command, like obedience, must belong to all.[4] All institutions, therefore, are democratic which are based upon the principles that election to the offices of state should be made

[1] See p. 235 sq. *supra*.

[2] Cf. the passages which are cited p. 238, n. 1, *supra*, especially *Polit.* iv. 2, 1289, b, 6: Plato says, if the oligarchy &c. be good, the democratic form of constitution is the worst, whereas if they are bad, it is the best. ἡμεῖς δὲ ὅλως ταύτας ἐξημαρτημένας εἶναί φαμεν, καὶ βελτίω μὲν ὀλιγαρχίαν ἄλλην ἄλλης οὐ καλῶς ἔχει λέγειν, ἧττον δὲ φαύλην. The imperfect forms of constitution are usually called παρεκβάσεις.

[3] P. 237 sqq.

[4] vi. 2, 1317, a, 40–b, 16, *inter alia*; see p. 239 sq.

either by universal suffrage, by lot, or by rotation; that no property qualification, or only an inconsiderable one, be attached to them; that their duration or their powers be limited; that all share in the administration of justice, especially in the more important cases; that the competence of the popular assembly be extended, that of the executive restricted, as much as possible; that all magistrates, judges, senators, and priests be paid. The senate is a democratic institution. When its functions are merged in those of the popular assembly, the government is more democratic still. Low origin, poverty, want of education, are considered to be democratic qualities.[1] But as these characteristics may be found in different degrees in different states, as moreover a particular state may exhibit all or only some of them, different forms of democracy arise.[2] As these variations will themselves chiefly depend, according to Aristotle, upon the occupation and manner of life of the people, it is of the highest political importance whether the population consists of peasants, artisans, or traders, or of one of the various classes of seamen, or of poor day-labourers, or of people without the full rights of citizenship, or whether and in what manner these elements are combined in it.[3] A population engaged in agriculture or in cattle-breeding is in

[1] *Ibid.* 1317, b, 16–1318, a, 3, iv. 15, 1300, a, 31.

[2] vi. 1, 1317, a. 22, 29 sqq.

[3] iv. 4, 1291, b, 15 sqq. c. 6 *init.* c. 12 (see p. 248, n. 1, *supra*), vi. 7 *init.* c. 1, 1317, a, 22 sqq. In the latter passage both grounds of the difference in democratic constitutions—the character of the population, and the extent to which the institutions are democratic—are mentioned side by side. From other passages, however, it is evident that Aristotle regards the second of these as dependent upon the first.

general content if it can devote itself to its work in peace. It is satisfied, therefore, with a moderate share in the administration: as, for example, the choice of the magistrates, their responsibility to itself, and the participation of all in the administration of justice. For the rest, it will like to leave its business in the hands of sensible men. This is the most orderly form of democracy. A community of artisans, traders, and labourers is a much more troublesome body to deal with. Their employments act more prejudicially upon the character, and being closely packed together in the city they are always ready to meet for deliberation in public assemblies. If all without exception possess the full rights of citizenship; if those who are not freeborn citizens are admitted to the franchise; if the old tribal and communal bonds are dissolved and the different elements in the population massed indiscriminately together; if the force of custom is relaxed and the control over women, children, and slaves is weakened, there necessarily arises that unregulated form of democracy which, as licence has always more attraction for them than order, is so dear to the masses.[1] In this way there arise different forms of democracy, of which Aristotle enumerates four.[2] The first is that in which actual equality reigns, and in which, while no exclusive

[1] *Polit.* vi. 4 (where, however, 1318, b, 13, μὴ must be struck out); cf. iv. 12, 1296, b, 24 sqq.

[2] iv. 4, 1291, b, 30 sqq. c. 6, cf. c. 12, *ibid.*, vi. 4, 1318, b, 6, 1319, a, 38. A fifth form seems, iv. 4, 1291, b, 39, to be inserted between the first and the second; its peculiarity, however, according to this passage, τὸ τὰς ἀρχὰς ἀπὸ τιμημάτων εἶναι, according to iv. 6 *init* is rather a characteristic of the first form. With SUSEMIHL and others, it will therefore be better to omit ἄλλο δὲ in the passage referred to. Cf. HENKEL, *ibid.* p. 82.

influence is conceded either to rich or poor, a certain property qualification—although a small one—is attached to the public offices. The second form is that in which no condition is attached to eligibility for office beyond citizenship and irreproachable character. A third is that in which, while the public offices belong by right to every citizen, the government is still conducted on constitutional principles. The fourth or unlimited democracy is, finally, that in which the decrees of the people are placed above the laws; in which the people, led by demagogues, as a tyrant by his courtiers, becomes a despot, and in which all constitutional order disappears in the absolute power of the many-headed sovereign.[1]

Oligarchy consists, as we already know, in the rule of the propertied classes. But here, also, we find a progress from more moderate forms to absolute, unlimited oligarchy. The mildest is that in which, while a property qualification sufficient to exclude the mass of poorer citizens from the exercise of political rights is demanded, the franchise is yet freely conceded to all who possess the requisite amount. The second form is that in which the government is originally in the possession only of the richest, who fill up their own ranks by co-optation, either from the whole body of the citizens or from a certain class. The third is that in which political power descends from father to son. The fourth, finally, as a parallel to tyranny and unlimited demo-

[1] With the account of this form of democracy, *ibid.* 1292, a, 4 sqq. v. 11, 1313, b, 32 sqq. vi. 2, 1317, b, 13 sqq., cf. PLATO'S *Rep.* viii. 557 A sqq. 562 B sqq. vi. 493, with the spirit of which it has obviously much in common.

cracy, is that in which hereditary power is limited by no laws.[1] Aristotle, however, here remarks, in terms that would apply equally to all forms of government, that the spirit of the administration is not unfrequently at variance with the legal form of the constitution, and that this is especially the case when a change in the constitution is imminent.[2] In this way there arise mixed forms of constitution; these, however, are just as often the result of the conscious effort to avoid the one-sidedness of democracy and oligarchy, as is the case with 'aristocracy' commonly so called and with polity.

Although the name aristocracy belongs, strictly speaking, only to the best form of constitution, Aristotle yet permits it to be applied to those forms also which, while they do not, like the former, make the virtue of the whole body of the citizens their chief aim, yet in electing to public office look, not to wealth only, but also to capacity. This kind of aristocracy, therefore, is a mixed form of government in which oligarchical, democratic, and genuinely aristocratic elements are all combined.[3] To this form 'polity' is closely allied.[4]

[1] *Polit.* iv. 5.

[2] *Ibid.* 1292, b, 11.

[3] So iv. 7, where Aristotle goes on to enumerate three kinds of aristocracy in this sense: ὅπου ἡ πολιτεία βλέπει εἴς τε πλοῦτον καὶ ἀρετὴν καὶ δῆμον, οἷον ἐν Καρχηδόνι . . . καὶ ἐν αἷς εἰς τὰ δύο μόνον οἷον ἡ Λακεδαιμονίων εἰς ἀρετήν τε καὶ δῆμον, καὶ ἔστι μίξις τῶν δύο τούτων, δημοκρατίας τε καὶ ἀρετῆς . . . καὶ τρίτον ὅσαι τῆς καλουμένης πολιτείας ῥέπουσι πρὸς τὴν ὀλιγαρχίαν μᾶλλον. v. 7, 1307, a, 7: ἀρχὴ γὰρ [τῆς μεταβολῆς] τὸ μὴ μεμῖχθαι καλῶς ἐν μὲν τῇ πολιτείᾳ δημοκρατίαν καὶ ὀλιγαρχίαν, ἐν δὲ τῇ ἀριστοκρατίᾳ ταῦτά τε καὶ τὴν ἀρετήν, μάλιστα δὲ τὰ δύο· λέγω δὲ τὰ δύο δῆμον καὶ ὀλιγαρχίαν· ταῦτα γὰρ αἵ πολιτεῖαί τε πειρῶνται μιγνύναι καὶ αἱ πολλαὶ τῶν καλουμένων ἀριστοκρατιῶν . . . τὰς γὰρ ἀποκλινούσας μᾶλλον πρὸς τὴν ὀλιγαρχίαν ἀριστοκρατίας καλοῦσιν, τὰς δὲ πρὸς τὸ πλῆθος πολιτείας.

[4] See preceding note, and iv.

Aristotle here describes it as a mixture of oligarchy and democracy.[1] It rests on a proper proportion between rich and poor;[2] it is the result of the union in one form or another of oligarchic and democratic institutions;[3] and accordingly it may be classed equally, in so far as this union is of the right sort, as a democracy and as an oligarchy.[4] Its leading feature is, in a word, the reconciliation of the antagonism between rich and poor and their respective governments. Where the problem is solved, and the proper mean is discovered between one-sided forms of government, there must result a universal contentment with existing institutions, and as a consequence fixity and permanence in the con-

11, 1295, a, 31: καὶ γὰρ ἃς καλοῦσιν ἀριστοκρατίας, περὶ ὧν νῦν εἴπομεν, τὰ μὲν ἐξωτέρω πίπτουσι ταῖς πλείσταις τῶν πόλεων, τὰ δὲ γειτνιῶσι τῇ καλουμένῃ πολιτείᾳ· διὸ περὶ ἀμφοῖν ὡς μιᾶς λεκτέον.

[1] iv. 8, 1293, b, 33: ἔστι γὰρ ἡ πολιτεία ὡς ἁπλῶς εἰπεῖν μίξις ὀλιγαρχίας καὶ δημοκρατίας, εἰώθασι δὲ καλεῖν τὰς μὲν ἀποκλινούσας ὡς πρὸς τὴν δημοκρατίαν πολιτείας, τὰς δὲ πρὸς τὴν ὀλιγαρχίαν μᾶλλον ἀριστοκρατίας. Cf. preceding note.

[2] *Ibid.* 1294, a, 19: ἐπεὶ δὲ τρία ἐστὶ τὰ ἀμφισβητοῦντα τῆς ἰσότητος τῆς πολιτείας, ἐλευθερία πλοῦτος ἀρετή, . . . φανερὸν ὅτι τὴν μὲν τοῖν δυοῖν μίξιν, τῶν εὐπόρων καὶ τῶν ἀπόρων, πολιτείαν λεκτέον, τὴν δὲ τῶν τριῶν ἀριστοκρατίαν μάλιστα τῶν ἄλλων παρὰ τὴν ἀληθινὴν καὶ πρώτην. See p. 278, n. 3, *supra*.

[3] iv. 9: in order to obtain a 'polity' we must fix our attention on the institutions which are peculiar to democracy and oligarchy, εἶτα ἐκ τούτων ἀφ' ἑκατέρας ὥσπερ σύμβολον [on this expression, cf. *inter alia*, *Gen. An.* i. 18, 722, b, 11; PLATO, *Symp.* 191 D] λαμβάνοντας συνθετέον. This may be effected in three ways: (1) by simply uniting different institutions in each: *e.g.* the oligarchical custom of punishing the rich if they refuse to take part in court business, with the democratic custom of paying poor men a day's wage for appearing in court; (2) by a compromise: *e.g.* by making neither a high nor a low but a moderate property qualification a condition of admission to the popular assembly; (3) by borrowing one of two kindred institutions from oligarchy, another from democracy: *e.g.* from the former, appointment to office by election instead of by lot; from the latter, the abolition of all property qualifications.

[4] *Ibid.* 1295, b, 14 sqq., where this is shown more fully from the example of the Spartan constitution.

stitution as a whole.[1] Hence polity is the form of government which promises to be the most enduring, and is the best adapted for most states. For if we leave out of consideration the most perfect constitution, and the virtue and culture which render it possible, and ask which is the most desirable,[2] only one answer is possible: that in which the disadvantages of one-sided forms of government are avoided by combining them,[3] and in which neither the poor nor the rich part of the population, but the prosperous middle class, has the decisive voice.[4] But this is exactly what we find in polity. It exhibits the antagonistic forces of rich and poor in equilibrium, and must itself, therefore, rest on the class which stands between them. It is the intermediate form of constitution,[5] that which is more favourable than any other to common well-being and universal justice,[6] and presupposes the preponderance

[1] *Ibid.* l. 34: *δεῖ δ' ἐν τῇ πολιτείᾳ τῇ μεμιγμένῃ καλῶς ἀμφότερα δοκεῖν εἶναι καὶ μηδέτερον, καὶ σώζεσθαι δι' αὑτῆς καὶ μὴ ἔξωθεν, καὶ δι' αὑτῆς μὴ τῷ πλείους ἔξωθεν εἶναι τοὺς βουλομένους* [not by the fact that the majority of those who wish another form of constitution are excluded from participation in State management] (*εἴη γὰρ ἂν καὶ πονηρᾷ πολιτείᾳ τοῦθ' ὑπάρχον*) *ἀλλὰ τῷ μηδ' ἂν βούλεσθαι πολιτείαν ἑτέραν μηθὲν τῶν τῆς πόλεως μορίων ὅλως.*

[2] Cf. iv. 11 *init.*: *τίς δ' ἀρίστη πολιτεία καὶ τίς ἄριστος βίος ταῖς πλείσταις πόλεσι καὶ τοῖς πλείστοις τῶν ἀνθρώπων μήτε πρὸς ἀρετὴν συγκρίνουσι τὴν ὑπὲρ τοὺς ἰδιώτας, μήτε πρὸς παιδείαν ἣ φύσεως δεῖται καὶ χορηγίας τυχηρᾶς, μήτε πρὸς πολιτείαν τὴν κατ' εὐχὴν γινομένην, ἀλλὰ βίον τε τὸν τοῖς πλείστοις κοινωνῆσαι δυνατὸν καὶ πολιτείαν ἧς τὰς πλείστας πόλεις ἐνδέχεται μετασχεῖν.* To this question (with which cf. p. 235) the answer is then given as in the text.

[3] iv. 11, 1297, a, 6: *ὅσῳ δ' ἂν ἄμεινον ἡ πολιτεία μιχθῇ, τοσούτῳ μονιμωτέρα.* Cf. v. 1, 1302, a, 2 sqq.

[4] v. 11; see p. 248, n. 1, *supra*.

[5] *μέση πολιτεία*, iv. 11, 1296, a, 37.

[6] iv. 11, 1296, a 22: why is the best constitution, that which is intermediate between oligarchy and democracy, so rare? Because in most cities the middle class (*τὸ μέσον*) is too weak; because in the wars between parties the victors established no

of the middle class over each of the other two.[1] The more any one of the other forms of constitution approximates to this the better it will be, the more widely it differs from it—if we leave out of account the circumstances which may give it a relative value in a particular case—the worse.[2] And as virtue consists in preserving the proper mean, it may be said that polity corresponds more closely than any other form of government to the life of virtue in the state;[3] and accordingly we shall be quite consistent in classing it among good constitutions, and in representing it as based upon the diffusion among all classes of a definite measure of civic virtue.[4] If, further, this virtue be sought for pre-eminently in military capacity, and polity be defined as the govern-

πολιτεία κοινὴ καὶ ἴση; because in like manner in the contest for the hegemony of Greece one party favoured democracy, the other oligarchy, and because men are accustomed μηδὲ βούλεσθαι τὸ ἴσον ἀλλ' ἢ ἄρχειν ζητεῖν ἢ κρατουμένους ὑπομένειν. Speaking of the influence τῶν ἐν ἡγεμονίᾳ γενομένων τῆς Ἑλλάδος, Aristotle here remarks, l. 39: for these reasons the μέση πολιτεία is either never found or ὀλιγάκις καὶ παρ' ὀλίγοις· εἷς γὰρ ἀνὴρ συνεπείσθη μόνος τῶν πρότερον ἐφ' ἡγεμονίᾳ γενομένων ταύτην ἀποδοῦναι τὴν τάξιν. The εἷς ἀνὴρ was formerly taken to be Lycurgus; others have suggested Theseus (SCHNEIDER, ii. 486 of his edition; SPENGEL, *Arist. Stud.* iii. 50), Solon (HENKEL, *ibid.* 89, SUSEMIHL, in *Bursian's Jahresbericht* for 1875, p. 376 sq.) and others. It cannot be said of any of these, however, that the hegemony of Hellas was in his hands. ONCKEN, on the other hand, *Staatsl. d. Arist.* ii. 269, refers the passage to Philip of Macedon; but while he certainly left each state its own constitution in the treaty of 338, it is not known that he anywhere introduced (ἀποδοῦναι) or restored the μέση πολιτεία. Can the reference be to Epaminondas and the communities of Megalopolis and Messene which were founded by him?

[1] iv. 12; see p. 248, n. 1, *supra*.

[2] *Ibid.* 1296, b, 2 sq.

[3] Cf. *Polit.* iv. 11, 1295, a, 35: εἰ γὰρ καλῶς ἐν τοῖς ἠθικοῖς εἴρηται τὸ τὸν εὐδαίμονα βίον εἶναι τὸν κατ' ἀρετὴν ἀνεμπόδιστον, μεσότητα δὲ τὴν ἀρετήν, τὸν μέσον ἀναγκαῖον βίον εἶναι βέλτιστον, τῆς ἑκάστοις ἐνδεχομένης τυχεῖν μεσότητος. τοὺς δὲ αὐτοὺς τούτους ὅρους ἀναγκαῖον εἶναι καὶ πόλεως ἀρετῆς καὶ κακίας καὶ πολιτείας· ἡ γὰρ πολιτεία βίος τίς ἐστι πόλεως.

[4] See p. 243, n. 1, *supra*.

ment of the men able to bear arms,[1] it may be pointed out in support of that view, first, that the only form of constitution which will be tolerated by a military population is one founded upon universal freedom and equality;[2] and, secondly, that the heavy-armed foot-soldiers who constituted the main strength of the Greek armies belonged chiefly to the well-to-do portion of the people.[3] Nevertheless, the ambiguity of the position of polity in Aristotle's account of it, to which attention has already been called in this chapter, cannot be said to be either justified or explained away by these remarks.

The worst of all forms of constitution is Tyranny, for in it the best—namely, true monarchy—has been transformed into its opposite.[4] In the course of the brief discussion which he devotes to it, Aristotle distinguishes three kinds of tyranny, applying the same name, not only to absolute despotism, but also to the elective monarchy of some barbarous peoples, and to the dictatorship of the old Greek Æsymnetae. True tyranny, however, is only to be found in a state where an individual wields absolute power in his own interest and against the will of the people.[5]

[1] iii. 7, 17; see p. 243, n. 2, *sup.*

[2] On this head, cf. iii. 11, 1281, b, 28 sq.

[3] vi. 7, 1321, a, 12: *τὸ γὰρ ὁπλιτικὸν τῶν εὐπόρων ἐστὶ μᾶλλον ἢ τῶν ἀπόρων.* The reason of this is to be sought for partly in the fact that the equipment of the hoplites was expensive, but chiefly in the preliminary training in gymnastics required by the service. Cf. also *Polit.* iv. 13, 1297, a, 29 sqq.

[4] iv. 2, 1289, a, 38 sqq. (cf. also vii. 1313, a, 34–1314, a, 29). On the same principle, according to this passage, oligarchy is the second worst, as aristocracy is the second best, constitution, while democracy is the most tolerable of the false forms, being a perversion of polity. For a fuller statement of the same view, see *Eth.* viii. 12.

[5] *Polit.* iv. 10; cf. iii. 14,

Aristotle next proceeds to examine what division of political power is best adapted to each of the different kinds of constitution,[1] distinguishing here three sources of authority: the deliberative assemblies, the magistrates, and the law courts.[2] The functions, however, of these three were not so defined as to permit of their being completely identified with the legislature, the executive, and the judicature of modern political theory.[3] He does not omit to draw attention here to the tricks and sophistries by which the predominant party, in one or other form of government, seeks to circumvent its opponent and to advance its own interests,[4] making it clear, however, that he himself sets small store by such petty and hollow devices.[5] He further discusses the qualities that fit a man for the discharge of the more important offices of state. He demands for this end not merely experience, business capacity, and attachment to the existing constitution, but before everything

1285, a, 16–b, 3, and p. 240 sq. *supra*.

[1] iv. 14–16; cf. vi. 2, 1317, b, 17–1318, a, 10.

[2] iv. 14, 1297, b, 37: ἔστι δὴ τρία μόρια τῶν πολιτειῶν πασῶν, περὶ ὧν δεῖ θεωρεῖν τὸν σπουδαῖον νομοθέτην ἑκάστῃ τὸ συμφέρον· ὧν ἐχόντων καλῶς ἀνάγκη τὴν πολιτείαν ἔχειν καλῶς, καὶ τὰς πολιτείας ἀλλήλων διαφέρειν ἐν τῷ διαφέρειν ἕκαστον τούτων· ἔστι δὲ τῶν τριῶν τούτων ἓν μὲν τί τὸ βουλευόμενον περὶ τῶν κοινῶν, δεύτερον δὲ τὸ περὶ τὰς ἀρχάς . . . τρίτον δὲ τί τὸ δικάζον.

[3] *Ibid.* 1298, a, 3, Aristotle continues: κύριον δ' ἐστὶ τὸ βουλευόμενον περὶ πολέμου καὶ εἰρήνης καὶ συμμαχίας καὶ διαλύσεως, καὶ περὶ νόμων, καὶ περὶ θανάτου καὶ φυγῆς καὶ δημεύσεως, καὶ τῶν εὐθυνῶν, so that conformably to Greek usage the deliberative assembly, in addition to its legislative functions, has important judicial and executive duties to perform.

[4] Ὅσα προφάσεως χάριν ἐν ταῖς πολιτείαις σοφίζονται πρὸς τὸν δῆμον, the ὀλιγαρχικὰ σοφίσματα τῆς νομοθεσίας, and on the other hand ἃ ἐν ταῖς δημοκρατίαις πρὸς ταῦτ' ἀντισοφίζονται, iv. 13.

[5] v. 2, 1307, b, 40, he advises: μὴ πιστεύειν τοῖς σοφίσματος χάριν πρὸς τὸ πλῆθος συγκειμένοις· ἐξελέγχεται γὰρ ὑπὸ τῶν ἔργων:

else that kind of culture and character which is in harmony with the spirit of the constitution.[1] He passes in review the various offices of state,[2] leaving off at the point where we should naturally have expected that portion of the missing discussion of the laws which relate to public offices. He treats with especial care, however, the causes which produce change and dissolution in particular forms of constitution[3] and the means to counteract them.[4] Here, also, he is true to his method of specifying as fully as possible, as the result of wide observation and reflection, all the various causes which are at work and the nature of their effects; and accordingly he challenges the conclusions of Plato's *Republic* on the subject of the revolutions in states and their causes, with justice indeed, in so far as his theory of politics is in stricter accordance with facts, but at the same time not without a certain misunderstanding of their true character.[5] This whole section is exceptionally rich in examples of acute observation, sound judgment, and profound knowledge of the world; it is impossible, however, to do more here than mention a few of the chief points of interest. Two of these stand out in special prominence. In the first place, he warns us against under-estimating small deviations from the *status quo*, or insignificant occasions of party strife. Important though the objects for which parties contend usually are, the actual outbreak of hostilities may be

[1] v. 9, where the third commonly neglected point of the *ἀρετὴ καὶ δικαιοσύνη ἐν ἑκάστῃ πολιτείᾳ ἡ πρὸς τὴν πολιτείαν* is discussed with especial fullness. Cf. p. 286, n. 3, *infra*.

[2] vi. 8.

[3] v. 1–7, 10.

[4] v. 8, 9, 11, vi. 5–7.

[5] v. 12, 1315, a, 40 sqq.; cf. ZELLER, *Platon. Stud.* 206 sq.

occasioned by the pettiest of causes,[1] and small as the change in a government may be at first, yet this may be itself the cause of a greater, and so there may gradually come about from small beginnings a complete revolution in the whole.[2] Secondly, we have the principle which constitutes one of the leading thoughts in Aristotle's *Politics*, and is not the least of the many proofs of political insight exhibited in the work—namely, that every form of government brings ruin on itself by its own excess, and that moderation in the use of authority, justice to all, good administration and moral capacity are the best means of retaining power. Democracies are ruined by demagogy and by injustice towards the prosperous classes; oligarchies, by oppression of the people and by the limitation of political rights to too small a minority; monarchies by arrogance and outrage in the rulers.[3] He who desires the maintenance of any particular form of government must endeavour above everything to keep it within the limits of moderation, and prevent it from courting its own destruction by any one-sided insistence on the principle of its constitution;[4] he must endeavour to reconcile con-

[1] v. 4 *init.*: γίγνονται μὲν οὖν αἱ στάσεις οὐ περὶ μικρῶν ἀλλ' ἐκ μικρῶν, στασιάζουσι δὲ περὶ μεγάλων. μάλιστα δὲ καὶ αἱ μικραὶ ἰσχύουσιν, ὅταν ἐν τοῖς κυρίοις γένωνται . . . ἐν ἀρχῇ γὰρ γίγνεται τὸ ἁμάρτημα, ἡ δ' ἀρχὴ λέγεται ἥμισυ εἶναι παντός &c.; in support of which there follows a rich collection of examples.

[2] v. 7, 1307, a, 40 sqq. c. 3, 1303, a, 20.

[3] v. 5, c. 6 *init.*, *ibid.* 1305, b, 2, 1306, a, 12, c. 10, 1311 a, 22 sqq. These are not the only causes of their ruin, according to Aristotle, but they are among the most frequent and important.

[4] v. 9, 1309, b, 18: παρὰ πάντα δὲ ταῦτα δεῖ μὴ λανθάνειν, ὃ νῦν λανθάνει τὰς παρεκβεβηκυίας πολιτείας, τὸ μέσον· πολλὰ γὰρ τῶν δοκούντων δημοτικῶν λύει τὰς δημοκρατίας καὶ τῶν ὀλιγαρχικῶν τὰς ὀλιγαρχίας, as is well shown in what follows. Cf. vi. 5, 1320, a, 2 sqq.

flicting factions; he must counterbalance the preponderance of one by assigning corresponding influence to the other, and so preserve the former from excess.[1] Above all, he must be careful to prevent the public offices from being worked for selfish ends, or one portion of the people from being plundered and oppressed by the other. Here the right course is precisely the opposite of that which is commonly pursued: it is precisely the natural opponents of a constitution that require most consideration, lest by unjust treatment they be transformed into active enemies of the commonwealth.[2] In another respect what is required by the nature of the case is the opposite of that which commonly occurs. Nothing is of greater importance for the preservation of any form of state than the previous education of those in whose hands the power is placed.[3] But capacity for rule depends solely upon modesty and hardihood; the power of the oligarch is incompatible with effeminacy, the freedom of the people with licentiousness.[4] And this is true of all forms of constitution without excep-

[1] v. 8, 1308, b, 24.

[2] v. 8, 1308, b, 31–1309, a, 32, c. 9, 1310, a, 2 sqq. vi 5, 1320, a, 4 sqq. 29 sqq. c. 7, 1321, a, 31 sqq.

[3] v. 9, 1310, a, 12: *μέγιστον δὲ πάντων τῶν εἰρημένων πρὸς τὸ διαμένειν τὰς πολιτείας, οὗ νῦν ὀλιγωροῦσι πάντες, τὸ παιδεύεσθαι πρὸς τὰς πολιτείας. ὄφελος γὰρ οὐθὲν τῶν ὠφελιμωτάτων νόμων καὶ συνδεδοξασμένων ὑπὸ πάντων τῶν πολιτευομένων, εἰ μὴ ἔσονται εἰθισμένοι καὶ πεπαιδευμένοι ἐν τῇ πολιτείᾳ.* Cf. pp. 261, 284, n. 1, *supra*.

[4] *Ibid.* l. 19: *ἔστι δὲ τὸ πεπαιδεῦσθαι πρὸς τὴν πολιτείαν οὐ τοῦτο, τὸ ποιεῖν οἷς χαίρουσιν οἱ ὀλιγαρχοῦντες ἢ οἱ δημοκρατίαν βουλόμενοι, ἀλλ' οἷς δυνήσονται οἱ μὲν ὀλιγαρχεῖν οἱ δὲ δημοκρατεῖσθαι. νῦν δ' ἐν μὲν ταῖς ὀλιγαρχίαις οἱ τῶν ἀρχόντων υἱοὶ τρυφῶσιν, οἱ δὲ τῶν ἀπόρων γίγνονται γεγυμνασμένοι καὶ πεπονηκότες, ὥστε καὶ βούλονται μᾶλλον καὶ δύνανται νεωτερίζειν.* Similarly in democracies: *ζῇ ἐν ταῖς τοιαύταις δημοκρατίαις ἕκαστος ὡς βούλεται . . . τοῦτο δ' ἐστὶ φαῦλον· οὐ γὰρ δεῖ οἴεσθαι δουλείαν εἶναι τὸ ζῆν πρὸς τὴν πολιτείαν, ἀλλὰ σωτηρίαν.*

tion. Even the absolute power of the monarch depends for its continuance upon its limitation;[1] and the unrighteous rule of the tyrant can only make men forget the odium of its origin by approaching in the form of its administration to monarchy. The best means for the maintenance of tyranny is care for the common well-being, for the embellishment of the city, and for the public services of religion, a modest household and good economy, ready recognition of merit, a courteous and dignified bearing, commanding personality, sobriety and strength of character, regard for the rights and interests of all.[2] So in like manner with regard to oligarchy, the more despotic it is, the more need is there for good order in the government: for just as it is the sickly body or the cranky vessel that demands the most careful management, so it is the bad state that most requires good administration in order to counterbalance its defects.[3] And so we arrive always at the same conclusion—namely, that justice and morality are the only security for durability in states. However deep the philosopher goes in the scientific analysis of the forms of constitution which more or less lack this foundation, it is only to arrive in the end at the same result, and to show that in them also the government must be conducted upon the principles which more obviously underlie the true forms: that which in these last is the

[1] v. 11 *init.*: σώζονται δὲ [αἱ μοναρχίαι] τῷ τὰς μὲν βασιλείας ἄγειν ἐπὶ τὸ μετριώτερον. ὅσῳ γὰρ ἐλαττόνων ὦσι κύριοι, πλείω χρόνον ἀναγκαῖον μένειν πᾶσιν τὴν ἀρχήν· αὐτοί τε γὰρ ἧττον γίνονται δεσποτικοὶ καὶ τοῖς ἤθεσιν ἴσοι μᾶλλον καὶ ὑπὸ τῶν ἀρχομένων φθονοῦνται ἧττον.

[2] v. 11, 1314, a, 29–1315, b, 10.

[3] vi. 6, 1320, b, 30 sqq.

primary object of government—namely, the well-being of all—is in the former an indispensable means for retaining the sovereignty.

The fates prevented Aristotle from developing his political views with the fullness and completeness he intended in his plan, and philosophy is, doubtless, greatly the loser. But even in the incomplete form in which we have it, the *Politics* is the richest treasure that has come down to us from antiquity, and, if we take into account the difference of the times, it is the greatest contribution to the field of political science that we possess.

# CHAPTER XIV

## RHETORIC

ARISTOTLE regards Rhetoric, as we have already seen, as auxiliary to Politics.[1] His treatment of this, as of other branches of science, was thoroughly revolutionary, and his labours may be said to form an epoch in its history. While his predecessors had contented themselves with what was little more than a collection of isolated oratorical aids and artifices,[2] he sought to lay bare the permanent principles which underlie a matter in which success is commonly regarded as a mere question of chance, or at best of practice and readiness, and thus to lay the foundations for a technical treatment of rhetoric.[3] He seeks to supply what Plato[4] had demanded but had not actually attempted—namely, a scientific account of the principles of the oratorical art. He does not limit the sphere of this art, as did the

[1] Cf. p. 185, n. 1, *supra*, and on Aristotle's rhetorical works, vol. i. p. 72 sq.

[2] Besides what PLATO, *Phædrus*, 266 C sqq., and Aristotle himself, *Rhet.* i. 1, 1354, a, 11 sqq., remarks, see also *Ph. d. Gr.* i. p. 1013 sqq.

[3] *Rhet.* i. 1, 1354, a, 6: τῶν μὲν οὖν πολλῶν οἱ μὲν εἰκῇ ταῦτα δρῶσιν, οἱ δὲ διὰ συνήθειαν ἀπὸ ἕξεως. ἐπεὶ δ' ἀμφοτέρως ἐνδέχεται, δῆλον ὅτι εἴη ἂν αὐτὰ καὶ ὁδοποιεῖν· δι' ὃ γὰρ ἐπιτυγχάνουσιν οἵ τε διὰ συνήθειαν καὶ οἱ ἀπὸ ταὐτομάτου, τὴν αἰτίαν θεωρεῖν ἐνδέχεται, τὸ δὲ τοιοῦτον ἤδη πάντες ἂν ὁμολογήσαιεν τέχνης ἔργον εἶναι.

[4] *Phædr.* 269 D sqq.; cf. ZELL. *Ph. d. Gr.* p. 803 sq.

ordinary view, to forensic and perhaps political oratory. He remarks, as his predecessor had done, that since the gift of speech is universal and may be applied to the most diverse purposes, and since its exercise, whether in public or in private, in giving advice, in exhortation, and in every kind of exposition, is essentially the same, rhetoric, like dialectic, is not confined to any special field;[1] as dialectic exhibits the forms of thought, so must rhetoric exhibit the forms of persuasive speech in all their universality, and apart from their application to any particular subject-matter.[2] On the other hand, as Plato had already observed,[3] the function of the art of oratory is different from that of philosophy: the latter aims at instruction, the former at persuasion; the goal of the one is truth, of the other probability.[4] Aristotle, however, differs from his teacher in the value he attaches to this art and to theoretical discussions devoted to its exposition.[5] He agrees, indeed, with Plato in reproaching ordinary rhetoric with limiting itself to aims which are merely external, and considering it merely as a means for exciting the emotions and winning over the jury, and with neglecting the higher branch of oratory

[1] *Rhet.* i. 1 *init.*, and 1355, b, 7, c. 2 *init.*, *ibid.* 1356, a, 30 sqq. ii. 18 *init.* c. 1, 1377, b, 21; cf. PLATO, *Phædr.* 261 A sqq.

[2] *Rhet.* i. 4, 1359, b, 12: ὅσῳ δ' ἄν τις ἢ τὴν διαλεκτικὴν ἢ ταύτην [rhetoric] μὴ καθάπερ ἂν δυνάμεις [dexterities] ἀλλ' ἐπιστήμας πειρᾶται κατασκευάζειν, λήσεται τὴν φύσιν αὐτῶν ἀφανίσας τῷ μεταβαίνειν ἐπισκευάζων εἰς ἐπιστήμας ὑποκειμένων τινῶν πραγμάτων, ἀλλὰ μὴ μόνον λόγων.

[3] Cf. *Ph. d. Gr.* i. p. 803 sq.

[4] *Rhet.* i. 1, 1355, a, 25, c. 2 *init.* See also *infra.*

[5] He does not, indeed, mention Plato in *Rhet.* i. 1, 1355, a, 20 sqq., but that he had him, and especially his *Gorgias* (*Ph. d. Gr.* i. p. 510), in his mind is rightly observed by SPENGEL (*Ueb. die Rhetorik des Arist.*: *Abh. d. philos.-philol. Kl. d. Bayer. Akad.* vi. 458 sq.).

—in which these means occupy a secondary place—for the lower, political for forensic eloquence. But on the other hand he recognises that the one essential function of the speaker, under all circumstances, is to convince his audience,[1] and accordingly he admits no rhetoric as genuine which is not based upon dialectic or the art of logical demonstration.[2] He even expressly declares that all rhetorical artifices must be rigorously excluded from the law courts, and orators forced to confine themselves exclusively to logical demonstration.[3] He recognises, however,[4] that all are not open to scientific instruction, but that for the majority of men we must start from the level of the common consciousness, which moves in a region of probability, and not of abstract truth. Nor does he see any great danger in so doing, for men, he holds, have a natural sense of truth, and as a general rule are right.[5] He reminds us that in the art of oratory we possess a means of securing the victory of right, as well as of defending ourselves; and that in order that we may not fall a prey to the arts of opponents, it is indispensable that we should ourselves understand their nature.[6] As, therefore, in the *Logic*

[1] *Rhet.* i. 1, 1354, a, 11 sqq. b, 16 sqq.

[2] *Ibid.* 1355, a, 3 sqq. b, 15, c. 2, 1356, a, 20 sqq.

[3] i. 1, 1354, a, 24: οὐ γὰρ δεῖ τὸν δικαστὴν διαστρέφειν εἰς ὀργὴν προάγοντας ἢ φθόνον ἢ ἔλεον· ὅμοιον γὰρ κἂν εἴ τις, ᾧ μέλλει χρῆσθαι κανόνι, τοῦτον ποιήσειε στρεβλόν. Cf. iii. 1, 1404, a, 4.

[4] *Ibid.* 1355, a, 20–b, 7; cf. iii. 1, 1404, a, 1 sqq.

[5] 1355, a, 14: rhetoric is based upon dialectic; τό τε γὰρ ἀληθὲς καὶ τὸ ὅμοιον τῷ ἀληθεῖ τῆς αὐτῆς ἐστὶ δυνάμεως ἰδεῖν, ἅμα δὲ καὶ οἱ ἄνθρωποι πρὸς τὸ ἀληθὲς πεφύκασιν ἱκανῶς καὶ τὰ πλείω τυγχάνουσι τῆς ἀληθείας· διὸ πρὸς τὰ ἔνδοξα στοχαστικῶς ἔχειν τοῦ ὁμοίως ἔχοντος καὶ πρὸς τὴν ἀλήθειαν ἐστιν. Cf. p. 256, n. 2, *supra*.

[6] *Ibid.* and 1355, b, 2: the misuse of the art of oratory is certainly very dangerous, but this is true of all accomplishments except virtue—the more so in proportion to their value.

he had supplemented the investigation of scientific proof by that of probable proof, in the *Politics* the account of the best with that of defective constitutions, so in the *Rhetoric*, he does not omit to treat of those aids to the orator which supplement actual proof, and to discuss the art of demonstration, not only in its strict sense, but also in the sense of probable proof, which starts with what is universally acknowledged and obvious to the mass of mankind.[1] But as he regards the former as the most

[1] Aristotle therefore treats rhetoric, not only as the counterpart of dialectic (ἀντίστροφος τῇ διαλεκτικῇ, *Rhet.* i. 1 *init.* — which, however, primarily refers merely to the fact that they both deal, not with the contents, but with the universal forms of thought and speech), but as a branch (see p. 185, n. 1, *supra*) and even as a part of it μόριόν τι τῆς διαλεκτικῆς καὶ ὁμοίωμα (*Rhet.* i. 2, 1356, a, 30—that SPENGEL, *Rhet. Gr.* i. 9, reads for ὁμοίωμα "ὁμοία," is for the question before us unimportant, but the alteration is not probable); a science compounded of analytic and ethics. In a word, it consists for the most part in an application of dialectic to certain practical problems (described p. 295, *infra*). While, therefore, we cannot directly apply to rhetoric all that is true of dialectic in general, and still less all that is true of it as applied to the service of philosophy, and while the distinctions which THUROT (*Etudes sur Aristote*, 154 sqq. 242 sq.; *Questions sur la Rhétorique d' Aristote*, 12 sq.) seeks to point out between the two sciences are, so far, for the most part well grounded, it does not follow from this that the above account of their relation to one another is incorrect, and that we have a right, with Thurot, to set aside the definite statement in *Rhet.* i. 2, by altering the text. For the orator's most important function, according to Aristotle, is demonstration, which, as only probable, falls within the sphere of dialectic (*Rhet.* i. 1, 1355, a, 3 sqq.); rhetoric is demonstration ἐξ ἐνδόξων in reference to the subjects which are proper to public speaking, as dialectic is a like kind of demonstration with reference to all possible subjects. Nor can we accept THUROT's proposal (*Etudes*, 248 sqq.) to read, *Rhet.* i. 1, 1355, a, 9, c. 2, 1356, a, 26, *Anal. Post.* i. 11, 77, a, 29, "ἀναλυτικὴ" instead of διαλεκτική. As the doctrine of συλλογισμὸς ἐξ ἐνδόξων, dialectic necessarily deals with inferences in general, and as it is precisely inferences of this kind which are the subject-matter of rhetoric, it is better to connect it with dialectic than with analytic, using διαλεκτική,

important sense, he devotes the fullest discussion to it. Of the three books of the *Rhetoric*, the first two, being the first section of his plan, treat of the means of proof (πίστεις); while the second and third parts, on style (λέξις) and arrangement (τάξις), are compressed into the last book, whose genuineness, moreover, is not beyond dispute.[1]

Proofs, according to Aristotle, are divided into those which fall within the province of art and those which do not. Rhetoric as a science has to do only with the former.[2] These are of three kinds, according as they depend upon the subject, the speaker, or the hearer. A speaker will produce conviction if he succeeds in showing that his assertions are true and that he is himself worthy of credit, and if he knows how to create a favourable impression upon his hearers. Under the first of these heads, that of the subject-matter, we shall have to discuss demonstration; under the second, or the character of the speaker, the means which the orator takes to recommend himself to his audience; under the third, or the disposition of the hearers, the appeals that he makes to their emotions.[3] The first and most important part of rhetoric, therefore, falls into these three sections.[4]

however, in a somewhat wide sense. On the relation of dialectic to rhetoric, see also WAITZ, *Arist. Org.* ii. 435 sq.

[1] Cf. vol. i. p. 74, *supra*; *Ph. d. Gr.* i. p. 389.

[2] *Rhet.* i. 2, 1355, b, 35: τῶν δὲ πίστεων αἱ μὲν ἄτεχνοί εἰσιν αἱ δ' ἔντεχνοι. ἄτεχνα δὲ λέγω ὅσα μὴ δι' ἡμῶν πεπόρισται ἀλλὰ προϋπῆρχεν, οἷον μάρτυρες βάσανοι συγγραφαὶ καὶ ὅσα τοιαῦτα, ἔντεχνα δὲ ὅσα διὰ τῆς μεθόδου καὶ δι' ἡμῶν κατασκευασθῆναι δυνατόν. ὥστε δεῖ τούτων τοῖς μὲν χρήσασθαι τὰ δὲ εὑρεῖν.

[3] i. 2, 1356, a, 1 sqq. ii. 1, 1377, b, 21 sqq. iii. 1, 1403, b, 9; cf. i. 8, 9, 1366, a, 8, 25.

[4] περὶ τὰς ἀποδείξεις, π. τὰ ἤθη, π. τὰ πάθη.

These, again, are found to deal with subjects of different intrinsic importance,[1] and it is therefore not unnatural that Aristotle should treat the first of them, the theory of demonstration, at the greatest length. Just as scientific proof proceeds by syllogism and induction, so rhetorical proceeds by enthymeme and instance.[2] The exposition of the various points of view from which a subject may be treated,[3] the topics of oratory, occupies a considerable portion of Aristotle's treatise; nor does he here limit himself to universal principles which are equally applicable to every kind of speech, but discusses those peculiarities in each which depend upon the particular aim it has in view and the character of its subject-matter;[4] he thus seeks to exhibit the principles of oratory, not only in respect to its general form, but also in respect to its particular matter. With this aim he distinguishes three different kinds or classes of

[1] See p. 291, n. 2, *supra*.

[2] *Rhet.* i. 2, 1356, a, 35–1357, b, 37, where the nature of these means of proof is fully explained, cf. ii. 22 *init.*; *Anal. Pri.* ii. 27, 70, a, 10. An enthymeme, according to this passage, is a συλλογισμὸς ἐξ εἰκότων ἢ σημείων. *Rhet.* 1356, b, 4 gives another definition: καλῶ δ' ἐνθύμημα μὲν ῥητορικὸν συλλογισμὸν, παράδειγμα δὲ ἐπαγωγὴν ῥητορικήν; it comes, however, to the same thing, as the orator, *qua* orator, is limited to probable evidence.

[3] In *Rhet.* i. 2, 1358, a, 2, ii. 26 *init.*, and ii. 1 *init.*, Aristotle speaks only of the principles of the enthymeme; but as the example only calls to mind in an individual case what the enthymeme states in a universal proposition, his account refers, as a matter of fact, to demonstration in general, as he, indeed, also includes in it (*e.g.* ii. 20, c. 23, 1397, b, 12 sqq. 1398, a, 32 sqq.) example and induction.

[4] *Rhet.* i. 2, 1358, a, 2 sqq.: the enthymeme consists partly of universal propositions which belong to no special art or science and are applicable, *e.g.*, to physics as well as ethics, partly of such as are of limited application within the sphere of a particular science, *e.g.* physics or ethics; the former Aristotle calls τόποι, the latter ἴδια or εἴδη, remarking that the distinction between them, fundamental as it is, had almost entirely escaped his predecessors.

speeches: deliberative, forensic, and declamatory.[1] The first of these has to do with advice and warning; the second, with indictment and defence; the third, with praise and blame. The first deals with the future; the second, with the past; the third, pre-eminently with the present. In the first, the question is of advantage and disadvantage; in the second, of right and wrong; in the third, of nobility and baseness.[2] Aristotle enumerates the topics with which each of these has to deal.[3] He indicates[4] the chief subjects upon which advice may be required in politics, and the questions which arise in connection with each, and upon which information must be sought. He discusses minutely the goal for which all human actions make—namely, happiness; its constituents and conditions;[5] the good and the things which we call good;[6] the marks by which we distinguish goods of a higher or a lower character;[7] and, finally, he gives a brief review of the distinguishing characteristics of the different forms of government, inasmuch as these must in each case determine both the orator's actual proposals and the attitude he assumes towards his hearers.[8] Similarly, with a view to the orator's practical guidance in the declamatory art, he enlarges upon the noble or honourable in conduct; upon virtue,

[1] Aristotle was also undoubtedly the first to point out this important division, for we cannot regard the *Rhetorica ad Alexandrum* (c. 2 *init.*), as has been already remarked, vol. i. p. 74, *supra*, as pre-Aristotelian.

[2] *Rhet.* i. 3.

[3] See the more general remarks in *Rhet.* i. 4 *init.*

[4] *Ibid.* 1359, b, 18 sqq., where five are enumerated: revenue, war and peace, defence, exports, and imports, legislation.

[5] i. 5.

[6] i. 6.

[7] *Ibid.* c. 7.

[8] i. 8, cf. vol. ii. p. 240, n. 3, *sup.*

its chief forms, its outward signs and effects; and upon the method which the orator must adopt in treating of these subjects.[1] For behoof of the forensic orator, he discusses, in the first place, the causes and motives of unjust actions, and since pleasure as well as good (which has already been discussed) may be a motive, Aristotle goes on to treat of the nature and kinds of pleasure and the pleasurable.[2] He inquires what it is in the circumstances both of the perpetrator and of the sufferer of the wrong that tempts to its committal.[3] He investigates the nature, the kinds, and the degrees of crime;[4] and adds, finally, in this section rules for the employment of those proofs which lie outside the province of art, and which find a place only in a judicial trial.[5] The views he propounds on all these subjects agree, of course, entirely with what we already know of his ethical and political convictions, except that here, in accordance with the aim of the work, they are presented in a more popular, and therefore sometimes in a less accurate and scientific, form. Only after thus discussing the individual peculiarities of the different kinds of oratory does Aristotle proceed to investigate those forms of proof which are equally applicable to all,[6] discussing under this head the universal forms of demonstration—namely, enthymeme and instance, together with a few

[1] i. 9.

[2] i. 10 sq.

[3] *πῶς ἔχοντες καὶ τίνας ἀδικοῦσιν*, *Rhet.* i, 12.

[4] i. 13 sq., cf. c. 10 *init.*

[5] i. 15, cf. p. 293, n. 2, *supra.*

[6] ii. 18 (from 1391, b, 23 onwards), c. 26, if, that is to say, we place this section (see vol. i. p. 74, *supra*), with SPENGEL, before the first seventeen chapters of the second book. But even if, with BRANDIS (iii. 194 sq.) and THUROT (*Etudes sur Arist.* 228 sqq.), we take the traditional order as the original one, we must admit that the contents of the section are more in place here.

rhetorical commonplaces.[1] Of the two other means of proof, besides demonstration proper—namely, the personal recommendations of the speaker and the impression upon the audience—the former is only cursorily touched upon, as the rules relating to it are deducible from other parts of the argument.[2] On the other hand, Aristotle goes into minute detail on the subject of the emotions and their treatment: on anger and the means of arousing and soothing it;[3] on love and hatred, desire and aversion, and the means of exciting each of them;[4] likewise on fear, shame, good will, sympathy,[5] indignation,[6] envy, and jealousy.[7] To this he finally adds an account of the influence which the age and outward circumstances (τύχαι) of a man exercise upon his character and disposition.[8]

These observations conclude the first and most important section of the *Rhetoric*; the third book treats more shortly of style and arrangement. In regard to the

[1] According to the announcement made c. 18 *fin.*, c. 19 treats especially of possibility and impossibility, actual truth and falsehood, relative importance and unimportance (περὶ δυνατοῦ καὶ ἀδυνάτου, καὶ πότερον γέγονεν ἢ οὐ γέγονεν καὶ ἔσται ἢ οὐκ ἔσται, ἔτι δὲ περὶ μεγέθους καὶ μικρότητος τῶν πραγμάτων, 1393, a, 19); c. 20 of illustration, c. 21 of gnomology; c. 21–26 of enthymemes, for which Aristotle gives, not only general rules (c. 22), but a complete topical account of the forms employed in proof and disproof (c. 23); of fallacies (c. 24); of instances for combating enthymemes (c. 25).

[2] ii. 1378, a, 6: to recommend him to his audience the orator must get credit for three things: insight, uprightness and benevolence: ὅθεν μὲν τοίνυν φρόνιμοι καὶ σπουδαῖοι φανεῖεν ἄν, ἐκ τῶν περὶ τὰς ἀρετὰς διῃρημένων (i. 9; see p. 296, n. 1, *sup.*) ληπτέον . . . περὶ δ' εὐνοίας καὶ φιλίας ἐν τοῖς περὶ τὰ πάθη λεκτέον νῦν.

[3] ii. 2, 3.

[4] c. 4.

[5] c. 5–8.

[6] The displeasure at the unmerited fortune of unworthy persons (νέμεσις), the account of which in *Rhet.* ii. 9 harmonises with that in *Eth.* ii. 7 (see p. 169).

[7] ii. 10, 11.

[8] ii. 12–17.

former, a distinction is in the first place drawn between delivery and language. While desiderating a technical system of instruction in rhetorical delivery, the author regrets the influence which so external a matter exercises on the general effect of a speech.[1] He next calls attention to the distinction between the language of the orator and of the poet, demanding of the former, as its two most essential requirements, clearness and dignity,[2] and advising as the means best fitted to secure them that the speaker should confine himself to appropriate expressions and effective metaphors,[3] upon the qualities and conditions of which he proceeds to enlarge.[4] He treats further of propriety of language,[5] fullness and suitability of expression,[6] rhythm and structure of the sentences,[7] grace and lucidity of presentation.[8] He examines, finally, the tone that should be adopted in written or oral discourse, and in the different kinds of oration.[9] It is impossible, however, to give here in detail the many striking observations which the writer makes upon these subjects. They clearly show that

[1] iii. 1, 1403, b, 21–1404, a, 23. Aristotle does not go fully into the discussion of what is good or bad delivery; he merely remarks that it depends upon the voice—especially upon its power, melody (ἁρμονία) and rhythm.

[2] τὸ πρέπον, the proper mean between τὸ ταπεινὸν and τὸ ὑπὲρ τὸ ἀξίωμα, between a bald and an overloaded style.

[3] iii. 1 sq. 1404, a, 24–b, 37.

[4] *Ibid.* to c. 4 *fin.*

[5] τὸ ἑλληνίζειν, iii. 5, in which, besides correct gender, number and syntax, are included definiteness and unambiguousness of expression, as well as τὸ εὐανάγνωστον and εὔφραστον.

[6] ὄγκος τῆς λέξεως, c. 6, τὸ πρέπον τ. λέξ. c, 7, which consists chiefly in the true relation between matter and style.

[7] The former c. 8, the latter c. 9.

[8] The ἀστεῖον and εὐδοκίμουν, the πρὸ ὀμμάτων ποιεῖν, &c., c. 10 sq.

[9] c. 12.

even if the book did not come direct from Aristotle in its present form, it is yet founded upon his teaching.

In the last section of the *Rhetoric*, which treats of arrangement, prominence is in the first place given to two indispensable parts of every speech: the presentation of the subject-matter,[1] and the demonstration. To these are added in the majority of speeches an introduction and a conclusion, so that there are four chief parts in all.[2] The method of treatment which each of these parts demands, and the rules both for their arrangement and execution which the character of the circumstances require, are discussed with great knowledge and penetration. And just as Aristotle's theory of oratory as a whole does not neglect the external aids to success, so here also devices are touched upon which are permitted to the orator only in consideration of the weakness of his hearers or of his case.[3] The *Rhetoric* stands in this respect also as the exact counterpart of the *Topics*. But here, as there, it is impossible to follow these discussions into greater detail.

[1] πρόθεσις, *expositio*. Narration is merely a particular kind of it which is employed only in forensic speeches; c. 13, 1414, a, 34 sqq.

[2] c. 13. In accordance with this division Aristotle discusses first (c. 14 sq.) the introduction, secondly (c. 16) the exposition of the subject (which, however, he here again calls διήγησις), c. 17 sq. the proofs, c. 19 the conclusion.

[3] Cf. *e.g.* c. 14, 1415, b, 4: δεῖ δὲ μὴ λανθάνειν ὅτι πάντα ἔξω τοῦ λόγου τὰ τοιαῦτα· πρὸς φαῦλον γὰρ ἀκροατὴν καὶ τὰ ἔξω τοῦ πράγματος ἀκούοντα, ἐπεὶ ἂν μὴ τοιοῦτος ᾖ οὐθὲν δεῖ προοιμίου, ἀλλ' ἢ ὅσον τὸ πρᾶγμα εἰπεῖν κεφαλαιωδῶς, ἵνα ἔχῃ ὥσπερ σῶμα κεφαλήν.

# CHAPTER XV

## THE PHILOSOPHY OF ART[1]

BESIDES knowledge and action, Aristotle distinguishes, as a third branch, artistic production, and to theoretic and practical he adds poetic science.[2] The latter, however, he fails to treat with the same comprehensive grasp as the two former. Of such of his works as have come down to us only one is devoted to art, and that not to art as a whole, but to the art of poetry; and even this we possess only in an imperfect form. But even of those which are lost none treated of art, or even of fine art, in a comprehensive manner.[3] Apart from a

[1] E. MÜLLER, *Gesch. der Theorie der Kunst bei den Alten*, ii. 1–181 BRANDIS, ii. b, 1683 sqq. iii. 156–178; TEICHMÜLLER, *Arist. Forsch.* vol. i. ii. 1867, 1869; REINKENS, *Arist. über Kunst bes. üb. Tragödie*, 1870; DÖRING, *Kunstlehre d. Arist.* 1876. For further literature on the subject see below and cf. UEBERWEG, *Grundr.* i. 204 sq.; cf. SUSEMIHL, *Jahrb. f. Philol.* lxxxv. 395 sqq. xcv. 150 sqq. 221 sqq. 827 sqq. cv. 317 sqq., in the preface and notes to his edition of the *Poetics* (2 ed. 1874), and in *Bursian's Jahresbericht* for 1873, p. 594 sqq. 1875, p. 381 sqq. 1876, p. 283 sqq.

[2] See vol. i. pp. 106 sq., 182.

[3] There is, according to Aristotle, a great difference between these; to τέχνη belong all the products of intelligence, beautiful and useful alike; see *inter alia* p. 107, n. 2, *sup.*; *Metaph.* i. 1, 981, b, 17, 21. While remarking, *Metaph. ibid.*, that some of the τέχναι serve πρὸς τἀναγκαῖα, others πρὸς διαγωγήν, while αἱ μὴ πρὸς ἡδονὴν μηδὲ πρὸς τἀναγκαῖα τῶν ἐπιστημῶν are different from both, he fails, nevertheless, to give any fuller account of the marks which distinguish the fine from the merely useful arts—in *Phys.* ii. 8, 199, a, 15 he is discussing, not (as TEICHMÜLLER,

book upon Music, whose genuineness is highly doubtful,[1] we hear only of historical and dogmatic treatises upon poets and the art of poetry, among which some were probably likewise spurious. We cannot, therefore, look to Aristotle for a complete theory of art; nor are his views even upon the art of poetry fully known to us from the sources which we possess.

Aristotle's philosophy of art is founded, like Plato's,[2] not on the conception of beauty in the abstract, but on that of art. The conception of beauty remains vague and undefined to the last. In dealing with moral beauty Aristotle compares the beautiful with the good inasmuch as the latter is desirable on its own account,[3] remarking at the same time elsewhere that, looked at from other points of view, it is as compared with

*Ar. Forsch.* ii. 89 sqq. believes) two kinds of arts, but a twofold relation of art generally to nature. Cf. p. 303, n. 3, *infra*, and DÖRING, p. 80 sq.

[1] On this treatise see vol. i. p. 103, n. 1, *supra*. The fragment in PLUT. *De Mus.* 23, p. 1139, which ROSE (*Fragm.* 43, p. 1482) and HEITZ (*Fr.* 75, p. 53) refer to the *Eudemus*, but for which a suitable place could hardly be found in this dialogue, seems to me to come from it. We cannot, however, regard this little piece, with its Pythagoreanism and copious style, as Aristotle's work.

[2] Of which account is given *Ph. d. Gr.* i. p. 795. BELGER, *De Arist. in Arte Poëtica componenda Platonis discipulo*, gives a full and careful account of the points in which Aristotle's theory of art agrees with Plato's, and those in which it differs from it.

[3] *Rhet.* i. 9, 1366, a, 33: καλὸν μὲν οὖν ἐστὶν ὃ ἂν δι' αὑτὸ αἱρετὸν ὂν ἐπαινετὸν ᾖ, ἢ ὃ ἂν ἀγαθὸν ὂν ἡδὺ ᾖ, ὅτι ἀγαθόν. ii. 13, 1389, b, 37: τὸ καλὸν as distinguished from τὸ συμφέρον or that which is good for the individual is the ἁπλῶς ἀγαθόν. Of the numberless passages in which τὸ καλὸν is used of moral beauty, *i.e.* of goodness, several have already come before us, *e.g.* p. 149, n. 3, p. 151, n. 2, and p. 192, n. 6, *supra*. We cannot find, however, in Aristotle (as P. RÉE, Τοῦ καλοῦ *notio in Arist. Eth.* Halle, 1875, attempts to do) any more accurate definition of this conception; neither in the ethical nor in the æsthetic field does he seem to have felt the need of such definition.

goodness a wider conception, for while the term good is applied only to certain actions, beauty is predicated also of what is unmoved and unchangeable.[1] As the essential marks of beauty he indicates, at one time order, symmetry and limitation,[2] at another right size[3] and order.[4] And yet how vague the conception of beauty is still left, and especially how remote is held to be its relation to sensible appearance, is obvious above all from the assertion[5] that it is chiefly in the mathe-

[1] *Metaph.* xiii. 3, 1078, a, 31: *ἐπεὶ δὲ τὸ ἀγαθὸν καὶ τὸ καλὸν ἕτερον, τὸ μὲν γὰρ ἀεὶ ἐν πράξει, τὸ δὲ καὶ ἐν τοῖς ἀκινήτοις.* Accordingly Mathematics (whose object, according to p. 183, is the unmoved) has to deal in a special sense with the beautiful. Aristotle applies, indeed, good as well as beautiful to the deity, who is absolutely unmoved (cf. p. 397, n. 3, and p. 404, *supra*), as he attributes to Him *πρᾶξις* in the wider sense (vol. i. p. 400, n. 1, *ad fin.*). But this does not justify us in converting the passage before us (as TEICHMÜLLER does, *Arist. Forsch.* ii. 209, 255 sqq.) into the opposite of its plain sense. It offers merely a further proof of the uncertainty of Aristotle's language with reference to *τὸ ἀγαθὸν* and *τὸ καλόν*. In *Metaph.* xiii. 3 he is thinking only of good in the ethical sense.

[2] *Metaph. ibid.* l. 36: *τοῦ δὲ καλοῦ μέγιστα εἴδη τάξις καὶ συμμετρία καὶ τὸ ὡρισμένον.* The *εἴδη* here are not different kinds of beauty, but the forms or qualities of things in which beauty reveals itself. How these points of view are maintained in Aristotle's rules of art is shown by MÜLLER, p. 9 sqq., who compares also *Probl.* xix. 38, xvii. 1.

[3] Practically identical with *τὸ ὡρισμένον*, as DÖRING rightly observes, p. 97.

[4] *Poet.* 7, 1450, b, 36 (cf. *Pol.* vii. 4, 1326, a, 29 sqq. b, 22; see p. 259, n. 1, *supra*, also *Eth.* iv. 3, 1123, b, 6): *τὸ γὰρ καλὸν ἐν μεγέθει καὶ τάξει ἐστί, διὸ οὔτε πάμμικρον ἄν τι γένοιτο καλὸν ζῷον (συγχεῖται γὰρ ἡ θεωρία ἐγγὺς τοῦ ἀναισθήτου χρόνου γινομένη) οὔτε παμμέγεθες· οὐ γὰρ ἅμα ἡ θεωρία γίνεται, ἀλλ' οἴχεται τοῖς θεωροῦσι τὸ ἓν καὶ τὸ ὅλον ἐκ τῆς θεωρίας, οἷον εἰ μυρίων σταδίων εἴη ζῷον.* As a visible object must be easily taken in by the eye by virtue of its size, so a mythus must be easy to retain. The parenthesis (*συγχεῖται γάρ*, &c.) means: if an object is too small, its parts become merged in each other, and no clear picture of it is possible. It is probable that *χρόνου* after *ἀναισθήτου* has crept into the text from *Phys.* iv. 13, 222, b, 15 (see BONITZ, *Arist. Stud.* i. 96; SUSEMIHL, *in loco*).

[5] *Metaph. ibid.* 1078, b, 1. In reply to TEICHMÜLLER'S objections to the above remark

matical sciences that the above characteristics find their application. If beauty is a quality not less of a scientific investigation or a good action than of a work of art, it is too vague a concept to serve as the foundation of a philosophy of art. Aristotle accordingly at the beginning of the *Poetics* sets it wholly aside,[1] and starts from the consideration of the nature of Art.[2] The essence of art Aristotle, like Plato, finds, generally speaking, to be imitation.[3] It has its origin

(*Arist. Forsch.* ii. 275 sq.), SUSEMIHL (*Jahrb. f. Philol.* cv. p. 321) has pointed out the confusion between the concrete phenomena of sense (*e g.* colours, sounds, &c.) and the abstract, mathematical forms of sensible existence.

[1] The words here used, πῶς δεῖ συνίστασθαι τοὺς μύθους, εἰ μέλλει καλῶς ἕξειν ἡ ποίησις (TEICHMÜLLER, ii. 278), are of course no argument against this view. It is hardly necessary to point out that such expressions as καλῶς ἔχειν, καλῶς λέγειν, &c. (*e.g.* in *Meteor.* i. 14, 352, a, 7, 11; *Polit.* iv. 14, 1297, b, 38; *Metaph.* xiii. 6 *init.*; *Eth.* vii. 13, and innumerable other passages), have nothing to do with the specifically aesthetic meaning of τὸ καλόν.

[2] TEICHMÜLLER, indeed, in a detailed discussion of beauty and the 'four aesthetic ideas' (order, symmetry, limitation and size), *ibid.* p. 208–278, has attempted to show that Aristotle's theory of art is based upon the conception of beauty. This attempt, however, is rightly discredited by DÖRING, p. 5 sqq. 93, sqq. If the abstract conception of beauty had been his starting point in his theory of art, Aristotle would have devoted himself before everything else to its closer investigation, and would have used the result of this investigation as the criterion of the claims of art. This, however, he does not do: and while, of course, he demands of a work of art that it should be beautiful, while he speaks of a καλῶς ἔχων μῦθος, a μῦθος καλλίων, a καλλίστη τραγῳδία, &c. (*Poet.* c. 9 *fin.* c. 11, 1452, a, 32, c. 13, 1452, b, 31, 1453, a, 12, 22, and *passim*), yet he never deduces any rule of art from the universal conception of beauty, but rather from the special aim of a particular art.

[3] *Poet.* i. 1447, a, 12 (on the different forms of poetry and music): πᾶσαι τυγχάνουσιν οὖσαι μιμήσεις τὸ σύνολον. c. 2 *init.* c. 3 *init.* and often. In the words, *Phys.* ii. 8, 199, a, 15, ὅλως τε ἡ τέχνη τὰ μὲν ἐπιτελεῖ ἃ ἡ φύσις ἀδυνατεῖ ἀπεργάσασθαι, τὰ δὲ μιμεῖται, art is used as fine art. It is mere imitation, but it may, indeed, be also regarded as a perfecting of nature, as in the training of the voice or deportment.

in the imitative instinct and the joy felt in its exercise which distinguishes man above all other creatures; hence also the peculiar pleasure which art affords.[1] In this pleasure, springing as it does from the recognition of the object represented in the picture and from the enjoyment thus obtained, Aristotle further recognises an intimation of the universal desire for knowledge.[2] But as knowledge is of very different value according to the nature of the object known,[3] this will of necessity be true of artistic imitation also. The object of imitation in art is, generally speaking, nature or the actual world of experience.[4] But nature includes man and his actions; indeed, it is with man alone that the most impressive arts—viz. poetry and music—have to do;[5] and the object which it is the essential aim of the imitative artist to represent consists not merely of the outward appearance of things, but to a much greater

[1] *Poet.* 4 *init.*, where it is added: this is obvious from the fact that good pictures delight us even when the objects represented produce themselves quite the opposite impression: as in the case of loathsome animals or corpses. Cf. foll. n.

[2] *Poet.* 4, 1448, b, 12, Aristotle continues: *αἴτιον δὲ καὶ τούτου* [joy in works of art], *ὅτι τὸ μανθάνειν οὐ μόνον τοῖς φιλοσόφοις ἥδιστον, ἀλλὰ καὶ τοῖς ἄλλοις ὁμοίως· ἀλλ' ἐπὶ βραχὺ κοινωνοῦσιν αὐτοῦ. διὰ γὰρ τοῦτο χαίρουσι τὰς εἰκόνας ὁρῶντες, ὅτι συμβαίνει θεωροῦντας μανθάνειν καὶ συλλογίζεσθαι τί ἕκαστον, οἷον ὅτι οὗτος ἐκεῖνος, ἐπεὶ ἐὰν μὴ τύχῃ προεωρακὼς, οὐ διὰ μίμημα ποιήσει τὴν ἡδονὴν ἀλλὰ διὰ τὴν ἀπεργασίαν ἢ τὴν χροιὰν ἢ διὰ τοιαύτην τινὰ ἄλλην αἰτίαν.* *Rhet.* i. 11, 1371, b, 4: *ἐπεὶ δὲ τὸ μανθάνειν τε ἡδὺ καὶ τὸ θαυμάζειν, καὶ τὰ τοιάδε ἀνάγκη ἡδέα εἶναι οἷον τό τε μεμιμημένον, ὥσπερ γραφικὴ καὶ ἀνδριαντοποιία καὶ ποιητικὴ, καὶ πᾶν ὃ ἂν εὖ μεμιμημένον ᾖ, κἂν ᾖ μὴ ἡδὺ αὐτὸ τὸ μεμιμημένον· οὐ γὰρ ἐπὶ τούτῳ χαίρει, ἀλλὰ συλλογισμός ἐστιν ὅτι τοῦτο ἐκεῖνο, ὥστε μανθάνειν τι συμβαίνει.*

[3] Cf. p. 303, n. 3, *supra*.

[4] *Phys.* ii. 8: see p. 303, n. 3.

[5] Cf. foll. n. and page. Even of the art of dancing it is said, c. 1. 1447, a, 27: *καὶ γὰρ οὗτοι διὰ τῶν σχηματιζομένων ῥυθμῶν μιμοῦνται καὶ ἤθη καὶ πάθη καὶ πράξεις.*

degree of their inner intelligible essence. He may confine himself to what is universal and actual, or he may rise above it, or he may sink below it.[1] He may represent things as they are, or as they are commonly supposed to be, or as they ought to be.[2] It is in representations of this last kind that the chief function of art consists. Art according to Aristotle must represent not the individual as such, but the universal, the necessary and the natural. It must not be content to reflect naked reality but must idealise it. The painter, for instance, must both be true to his subject and improve upon it;[3] the poet must tell us, not what has been, but what must be according to the nature of the case, and on this account Aristotle prefers poetry to history, as higher and more nearly allied to philosophy, seeing that it reveals to us not only individual facts but universal laws.[4] And this holds not only of

[1] *Poet.* 2 *init.*: ἐπεὶ δὲ μιμοῦνται οἱ μιμούμενοι πράττοντας, ἀνάγκη δὲ τούτους ἢ σπουδαίους ἢ φαύλους εἶναι . . . ἤτοι βελτίονας ἢ καθ' ἡμᾶς ἢ χείρονας ἢ καὶ τοιούτους, which Aristotle proceeds to illustrate from painting, poetry, and music.

[2] *Ibid.* 25, 1460, b, 7: ἐπεὶ γάρ ἐστι μιμητὴς ὁ ποιητής, ὥσπερ ἂν εἰ ζωγράφος ἤ τις ἄλλος εἰκονοποιός, ἀνάγκη μιμεῖσθαι τριῶν ὄντων τὸν ἀριθμὸν ἕν τι ἀεί· ἢ γὰρ οἷα ἦν ἢ ἔστιν, ἢ οἷά φασι καὶ δοκεῖ, ἢ οἷα εἶναι δεῖ. We may regard these words as genuine, although they stand in a rather suspicious section.

[3] *Poet.* 15, 1454, b, 8: ἐπεὶ δὲ μίμησίς ἐστιν ἡ τραγῳδία βελτιόνων, ἡμᾶς δεῖ μιμεῖσθαι τοὺς ἀγαθοὺς εἰκονογράφους· καὶ γὰρ ἐκεῖνοι ἀποδιδόντες τὴν ἰδίαν μορφήν, ὁμοίους ποιοῦντες, καλλίους γράφουσιν. The idealism of the Greek statues of the gods did not, of course, escape the philosopher's notice; cf. vol. ii. p. 217, n. 5, *supra*.

[4] *Poet.* 9 *init.*: οὐ τὸ τὰ γινόμενα λέγειν, τοῦτο ποιητοῦ ἔργον ἐστίν, ἀλλ' οἷα ἂν γένοιτο, καὶ τὰ δυνατὰ κατὰ τὸ εἰκὸς ἢ τὸ ἀναγκαῖον. ὁ γὰρ ἱστορικὸς καὶ ὁ ποιητὴς οὐ τῷ ἔμμετρα λέγειν ἢ ἄμετρα διαφέρουσιν· εἴη γὰρ ἂν τὰ Ἡροδότου εἰς μέτρα τεθῆναι, καὶ οὐδὲν ἧττον ἂν εἴη ἱστορία τις μετὰ μέτρου ἢ ἄνευ μέτρων, ἀλλὰ τούτῳ διαφέρει, τῷ τὸν μὲν τὰ γενόμενα λέγειν, τὸν δὲ οἷα ἂν γένοιτο. διὸ καὶ φιλοσοφώτερον καὶ σπουδαιότερον ποίησις ἱστορίας ἐστίν· ἡ μὲν

serious poetry but also of comic. The former in bringing before us forms which transcend ordinary limits must give us an ennobled picture of human nature, for it must represent typical characters in whom the true nature of certain moral qualities is sensibly exhibited to us;[1] but the latter also, although dealing necessarily with the weaknesses of human nature,[2] must nevertheless make it its chief end not to attack individuals but to present types of character.[3] While,

γὰρ ποίησις μᾶλλον τὰ καθόλου, ἡ δ' ἱστορία τὰ καθ' ἕκαστον λέγει. ἔστι δὲ καθόλου μὲν, τῷ ποίῳ τὰ ποῖ' ἄττα συμβαίνει λέγειν ἢ πράττειν κατὰ τὸ εἰκὸς ἢ τὸ ἀναγκαῖον . . . τὰ δὲ καθ' ἕκαστον, τί Ἀλκιβιάδης ἔπραξεν ἢ τί ἔπαθεν. *Ibid.* 1451, b, 29: κἂν ἄρα συμβῇ γενόμενα ποιεῖν [τὸν ποιητὴν] οὐθὲν ἧττον ποιητής ἐστιν· τῶν γὰρ γενομένων ἔνια οὐδὲν κωλύει τοιαῦτα εἶναι οἷα ἂν εἰκὸς γενέσθαι καὶ δυνατὰ γενέσθαι. Cf. c. 15, 1454, a, 33: χρὴ δὲ καὶ ἐν τοῖς ἤθεσιν ὥσπερ καὶ ἐν τῇ τῶν πραγμάτων συστάσει, ἀεὶ ζητεῖν ἢ τὸ ἀναγκαῖον ἢ τὸ εἰκὸς, ὥστε τὸν τοιοῦτον τὰ τοιαῦτα λέγειν ἢ πράττειν ἢ ἀναγκαῖον ἢ εἰκὸς, καὶ τοῦτο μετὰ τοῦτο γίνεσθαι ἢ ἀναγκαῖον ἢ εἰκός. C. 1, 1447, b, 13 sqq.: it is not the metre but the content that makes the poet. Empedocles (whose Homeric power Aristotle praises in *Diog.* viii. 56) has nothing but the metre in common with Homer.

[1] *Poet.* 15 (see p. 305, n. 3, *supra*), Aristotle continues: οὕτω καὶ τὸν ποιητὴν μιμούμενον καὶ ὀργίλους καὶ ῥᾳθύμους καὶ τἆλλα τὰ τοιαῦτα ἔχοντας ἐπὶ τῶν ἠθῶν, ἐπιεικείας ποιεῖν παράδειγμα ἢ σκληρότητος δεῖ &c. Cf. following note and c. 13, 1453, a, 16.

[2] C. 2 *fin.*: ἡ μὲν γὰρ [comedy] χείρους ἡ δὲ βελτίους μιμεῖσθαι βούλεται τῶν νῦν. C. 5 *init.*: ἡ δὲ κωμῳδία ἐστὶν, ὥσπερ εἴπομεν, μίμησις φαυλοτέρων μὲν, οὐ μέντοι κατὰ πᾶσαν κακίαν, ἀλλὰ τοῦ αἰσχροῦ ἐστὶ τὸ γελοῖον μόριον. τὸ γὰρ γελοῖόν ἐστιν ἁμάρτημά τι καὶ αἶσχος ἀνώδυνον καὶ οὐ φθαρτικόν.

[3] Cf. *Poet.* 9, 1451, b, 11 sqq. c. 5, 1449, b, 5; *Eth.* iv. 14, 1128, a, 22. Aristotle here gives the New Comedy the preference over the Old because it refrains from abuse (αἰσχρολογία). He gives Homer, moreover, the credit (*Poet.* 4, 1448, b, 34) of being creator, in the character of Margites, of comedy, οὐ ψόγον ἀλλὰ τὸ γελοῖον δραματοποιήσας. The *Poetics* are doubtless the source (cf. vol. i. p. 102, n. 2) of the remark in CRAMER'S *Anecd. Paris.* Append. I. (*Arist. Poet.* p. 78; VAHL. p. 208; *Fr.* 3 SUS.): διαφέρει ἡ κωμῳδία τῆς λοιδορίας, ἐπεὶ ἡ μὲν λοιδορία ἀπαρακαλύπτως τὰ προσόντα κακὰ διέξεισιν, ἡ δὲ δεῖται τῆς καλουμένης ἐμφάσεως [indication]. To this subject belongs the remark in *Rhet.* iii. 18, 1419, b, 7, where it is said that εἰρωνεία is more worthy of the freeman than βωμολοχία. This also had

therefore, Plato and Aristotle agree in regarding art as a species of imitation, they draw very different conclusions from this account of it. Plato thinks of it only as the imitation of sensible phenomena and accordingly expresses the utmost contempt for the falsity and worthlessness of art;[1] Aristotle, on the other hand, looks upon artistic presentation as the sensible vehicle to us of universal truths and thus places it above the empirical knowledge of individual things.

We are now in a position to explain what Aristotle says about the aim and the effect of Art. In two passages[2] to which we have already had occasion to refer, he distinguishes four different uses of

been particularly treated of by Aristotle in the *Poetics* (*Rhet.* i. 11, 1372, a, 1: διώρισται δὲ περὶ γελοίων χωρὶς ἐν τοῖς περὶ ποιητικῆς: cf. VAHLEN, *ibid.* p. 76; *Fr.* 2), from which must come *Fr.* 9 of the *Anecd. Paris. ibid.*: ἤθη κωμῳδίας τά τε βωμολόχα καὶ τὰ εἰρωνικὰ καὶ τὰ τῶν ἀλαζόνων.

[1] See *Ph. d. Gr.* i. p. 799—a view which is not consistent with the fact that art is at the same time regarded as one of the most important means of education whose function is the presentation of moral ideas (*ibid.* p. 532 sq. 772 sq. 800 sq; cf. *Symp.* 209 D).

[2] *Pol.* viii. 5, 7, see p. 266, *supra.* In the former of these passages no mention is made of purification; it is merely asked (1339, a, 15): τίνος δεῖ χάριν μετέχειν αὐτῆς, πότερον παιδιᾶς ἕνεκα καὶ ἀναπαύσεως . . . ἢ μᾶλλον οἰητέον πρὸς ἀρετήν τι τείνειν τὴν μουσικὴν, ὡς δυναμένην . . . τὸ ἦθος ποιόν τι ποιεῖν, ἐθίζουσαν δύνασθαι χαίρειν ὀρθῶς. ἢ πρὸς διαγωγήν τι συμβάλλεται καὶ φρόνησιν· καὶ γὰρ τοῦτο τρίτον θετέον τῶν εἰρημένων. On the other hand it is very definitely referred to in the second (1341, b, 36): φαμὲν δ' οὐ μιᾶς ἕνεκεν ὠφελείας τῇ μουσικῇ χρῆσθαι δεῖν ἀλλὰ καὶ πλειόνων χάριν (καὶ γὰρ παιδείας ἕνεκεν καὶ καθάρσεως . . . τρίτον δὲ πρὸς διαγωγὴν, πρὸς ἄνεσίν τε καὶ πρὸς τὴν τῆς συντονίας ἀνάπαυσιν). But, on this account, to change the text of the latter passage with SPENGEL (*Ueber die κάθαρσις τῶν παθημάτων, Abh. der philos.-philol. Kl. der Bayr. Akad.* ix. 1, 16 sq.), and to read: καὶ γὰρ παιδείας ἕνεκεν καὶ καθάρσεως, . . . πρὸς διαγωγὴν, τρίτον δὲ πρὸς ἄνεσίν τε &c. or κ. γ. παιδ. ἕν. κ. καθάρσ., πρὸς ἄνεσίν τε—ἀνάπαυσιν, τρίτον δὲ πρὸς διαγωγὴν, is a violent expedient against which BERNAYS (*Rhein. Mus.* xiv. 1859, p. 370 sqq.) rightly

music[1]: it serves (i) as a relaxation and amusement; (ii) as a means of moral culture; (iii) as an enjoyable exercise; and (iv) as a purifying influence. Whether each form of art has this fourfold function or not, he does not expressly say; nor could he in any case have regarded them as all alike in this respect. Of the plastic arts he remarks that their ethical effect, although considerable, is inferior to that of music,[2] while he probably hardly thought of attributing a purifying influence to them. Where they confine themselves to the exact imitation of particular objects, they serve in his view no higher purpose than the satisfaction of a rather shallow

protests. The first of these proposals is hardly permissible, even from the point of view of style, while neither of them finds any support in the alleged contradiction between c. 5 and c. 7, as it is not unfrequently the case in Aristotle that a preliminary division is supplemented in the sequel (cf. *e.g.* what is said, vol. i. p. 400, sqq., on the different classifications of constitution); both, moreover, are inconsistent with the distinction between edifying and purifying music, as that is definitely set forth in c. 7, and calls for immediate notice.

[1] Not merely three, as BERNAYS *ibid.* represents by taking ἀνάπαυσις and διαγωγὴ together. Aristotle differentiates the two very clearly: young people, he says, are incapable of διαγωγή, whereas they are very much inclined to παιδιὰ and ἄνεσις (see vol. ii. p. 267, n. 1, *supra*); the former is an end in itself [τέλος], the latter a mere means (c. 5, 1339, a, 29, b, 25–42; cf. *Eth.* x. 6, 1176, b, 27 sqq. p. 140, *supra*); the former presupposes a higher culture (see p. 309, n. 3, *infra*), not so the latter: and accordingly they are completely separated from one another, 1339, a, 25, b, 13, 15 sqq., *ibid.* 4; cf. a, 33. Cf. p. 266, n. 5, *supra*.

[2] *Pol.* viii. 5, 1340, a, 28: συμβέβηκε δὲ τῶν αἰσθητῶν ἐν μὲν τοῖς ἄλλοις μηδὲν ὑπάρχειν ὁμοίωμα τοῖς ἤθεσιν, οἷον ἐν τοῖς ἁπτοῖς καὶ τοῖς γευστοῖς, ἀλλ' ἐν τοῖς ὁρατοῖς ἠρέμα· σχήματα γάρ ἐστι τοιαῦτα (*i.e.* moral attitudes and gestures), ἀλλ' ἐπὶ μικρὸν καὶ πάντες [read οὐ πάντες, as MÜLLER *ibid.* 10 sq. 348 sqq. conjectures] τῆς τοιαύτης αἰσθήσεως κοινωνοῦσιν. ἔτι δὲ οὐκ ἔστι ταῦτα ὁμοιώματα τῶν ἠθῶν, ἀλλὰ σημεῖα μᾶλλον τὰ γιγνόμενα σχήματα καὶ χρώματα τῶν ἠθῶν. Nevertheless, young men ought not, ὅσον διαφέρει καὶ περὶ τὴν τούτων θεωρίαν, to be allowed to study the pictures of a Pauson but those of a Polygnotus κἂν εἴ τις ἄλλος τῶν γραφέων ἢ τῶν ἀγαλματοποιῶν ἐστὶν ἠθικός.

curiosity.[1] Nor does he seem to expect from Comedy (on which see below) either morally edifying or purifying results. On the other hand, the purification of the emotions is the chief end, as we shall see, of serious poetry, although that art is not, of course, thereby excluded from exercising upon the hearer other effects as well which are either connected with or flow from the first. Granted that a part of this effect—viz. the amusement—is due to the pleasure derived from sensible appearance, yet the higher and more valuable portion is due to that ideal content which, according to Aristotle, it is the function of Art to present. As a means to nobler intellectual enjoyment (διαγωγὴ) the higher poetry must appeal to our reason, since according to Aristotelian principles the measure of our rational activity is also the measure of our happiness;[2] and, as a matter of fact, Aristotle regards this purifying effect of art as standing in the closest relation to intellectual culture.[3] In like manner poetry can only serve for moral edification by exhibiting to us the nature and aim of moral action in examples that excite our admiration or abhorrence, as Aristotle holds it ought undoubtedly to do.[4] Finally, as to the purifying effect of Art, we must admit

[1] Cf. vol. ii. p. 304, n. 2, *sup.*

[2] See the quotations from *Eth.* x. 8, *sup.* vol. ii. p. 143, n. 1.

[3] In the words quoted from *Pol.* viii. 5, p. 307, n. 2, *supra*: πρὸς διαγωγήν τι συμβάλλεται καὶ φρόνησιν. SPENGEL, *ibid.* p. 16, and independently of him THUROT, *Études sur Arist.* 101, propose to read, instead of φρόνησιν, εὐφροσύνην (or τὸ εὐφραίνειν), remarking that φρόνησις would not belong to διαγωγὴ but to the previously mentioned ἀρετή. This, however, is incorrect. By ἀρετὴ Aristotle means moral virtue, the training of character; by διαγωγὴ καὶ φρόνησις, the training of the intellect and the taste. Cf. what was said about διαγωγὴ *supra*, vol. ii. p. 266, n. 5.

[4] See p. 304 sq.

that to this day, after all the endless discussions to which Aristotle's definition of Tragedy has given rise,[1] no agreement has been arrived at upon the question wherein, according to his view, it consists and what are the conditions of its production. This is, however, the less extraordinary, since in the extant portion of the *Poetics* the fuller discussion of 'purification' contained in the original work is missing,[2] though the want may be partly supplied from other passages. These show, in the first place, that the purification of the emotions which is effected by art takes place not in the work of art itself, but in those who see or hear it.[3] We further learn that the immediate object is not, as was formerly supposed,[4]

[1] For a review of these see SUSEMIHL, *Arist. π. ποιητ.* p. 36 sqq. and elsewhere (see p. 300, n. 1); REINKENS, p. 78–135, and DÖRING, p. 263 sqq. 339 sq.; the last discusses some seventy essays and treatises bearing on the subject, most of them written within the previous fifteen years.

[2] See *supra*, vol. i. p. 102, n. 2.

[3] GOETHE (*Nachlese zu Arist. Poëtik*, 1826; *Briefwechsel mit Zelter*, iv. 288, v. 330, 354) explained the words δι' ἐλέου καὶ φόβου περαίνουσα τὴν τῶν τοιούτων παθημάτων κάθαρσιν in the definition of tragedy, *Poet.* 6, 1449, b, 24 sqq. as referring to the tranquillising effect upon the actors themselves. This explanation, however, is now universally acknowledged to be inadmissible (*e.g.* by MÜLLER, *ibid.* 380 sqq.; BERNAYS, *ibid.* 137; SPENGEL, *ibid.* 6). Apart from the linguistic difficulty, *Pol.* viii. 7, 1342, places beyond a doubt that the κάθαρσις is effected in the audience, and the same may be proved, as MÜLLER well shows, from the *Poetics*; for it could be said that tragedy, through fear and pity, effects a purification of these emotions in the actors only on condition that they came upon the stage in a condition of fear or pity, which (as LESSING, *Hamb. Dramat.* 78 *St.* has remarked) is by no means usually, and in the circumstances cannot possibly often be, the case. Aristotle, however, has expressed himself on this point as clearly as possible, c. 14 *init.* Δεῖ γὰρ [he says in treating of the production of the φοβερὸν and ἐλεεινὸν] καὶ ἄνευ τοῦ δρᾷν οὕτω συνεστάναι τὸν μῦθον ὥστε τὸν ἀκούοντα τὰ πράγματα γινόμενα καὶ φρίττειν καὶ ἐλεεῖν ἐκ τῶν συμβαινόντων.

[4] Thus LESSING, with all previous writers, *Hamb. Dram.* 74-78 *St.* (*Werke*, vii. 352 sqq. *Lachm.*): 'this purification depends on

moral improvement, but primarily the production of an effect upon the emotions. Aristotle himself definitely distinguishes between purification and moral culture as separate aims:[1] he would use for the latter as opposed to the former a style of music which is wholly different and requires different treatment.[2] He describes purification, moreover, as a species of healing and as a

nothing else than the transformation of the passions into promptitudes to virtue' (p. 352). He has been followed by many others, *e.g.* SPENGEL in the treatise referred to, p. 307, n. 2, *supra*.

[1] *Pol.* viii. 7, 1341, b, 36, see *supra* c. 6, 1341, a, 21. ἔτι δ' οὐκ ἔστιν ὁ αὐλὸς ἠθικὸν ἀλλὰ μᾶλλον ὀργιαστικόν, ὥστε πρὸς τοὺς τοιούτους αὐτῷ καιροὺς χρηστέον ἐν οἷς ἡ θεωρία κάθαρσιν μᾶλλον δύναται ἢ μάθησιν.

[2] See preceding n. and c 7, 1341, b, 32: since we must distinguish a moral, a practical and an exciting and inspiring kind of music, and since further music has to serve the different ends stated at p. 307, n. 2,—therefore φανερὸν ὅτι χρηστέον μὲν πάσαις ταῖς ἁρμονίαις, οὐ τὸν αὐτὸν δὲ τρόπον πάσαις χρηστέον, ἀλλὰ πρὸς μὲν τὴν παιδείαν ταῖς ἠθικωτάταις πρὸς δὲ ἀκρόασιν ἑτέρων χειρουργούντων καὶ ταῖς πρακτικαῖς καὶ ταῖς ἐνθουσιαστικαῖς. ὃ γὰρ περὶ ἐνίας συμβαίνει πάθος ψυχὰς ἰσχυρῶς, τοῦτο ἐν πάσαις ὑπάρχει, τῷ δὲ ἧττον διαφέρει καὶ τῷ μᾶλλον [there does not seem to be any reason to doubt these words with REINKENS, p. 156], οἷον ἔλεος καὶ φόβος, ἔτι δ' ἐνθουσιασμός. καὶ γὰρ ὑπὸ ταύτης τῆς κινήσεως κατακώχιμοί τινές εἰσιν· ἐκ δὲ τῶν ἱερῶν μελῶν ὁρῶμεν τούτους, ὅταν χρήσωνται τοῖς ἐξοργιάζουσι τὴν ψυχὴν μέλεσι, καθισταμένους ὥσπερ ἰατρείας τυχόντας καὶ καθάρσεως. ταὐτὸ δὴ τοῦτο ἀναγκαῖον πάσχειν καὶ τοὺς ἐλεήμονας καὶ τοὺς φοβητικοὺς καὶ τοὺς ὅλως παθητικοὺς [the MSS. reading for which Spengel unnecessarily suggests ὅλως τοὺς παθ.], τοὺς δ' ἄλλους καθ' ὅσον ἐπιβάλλει τῶν τοιούτων ἑκάστῳ, καὶ πᾶσι γίγνεσθαί τινα κάθαρσιν καὶ κουφίζεσθαι μεθ' ἡδονῆς. ὁμοίως δὲ καὶ τὰ μέλη τὰ καθαρτικὰ παρέχει χαρὰν ἀβλαβῆ τοῖς ἀνθρώποις. (This is a further effect of purifying music, different from the κάθαρσις itself: it purifies the παθητικοί and affords enjoyment to all; the lacuna therefore which THUROT, *Etudes*, 102 sq. surmises before ὁμοίως δὲ cannot be admitted.) From this passage, (however we may interpret its general meaning) this at any rate seems obvious, that according to Aristotle there is a kind of music which produces a catharsis, although it possesses no ethical character, and may not, therefore, be used in the education of the youth, nor practised by the citizens, although it may be listened to by them—namely, exciting music; but if this is so, the catharsis, while not without an indirect moral influence, yet cannot in itself, as regarded from the point of view

mental alleviation accompanied by pleasure,[1] and accordingly looks for it not in any improvement of the will or in the production of virtuous inclinations,[2] but in the equalisation of disturbances produced by violent emotions and the restoration of equanimity.[3] It is here of less importance, in point of actual fact, whether it is the religious or the medical meaning of 'purification' that is prominent in Aristotle's mind;[4] since in either case alike we are dealing with a figurative expression, in the sense that the term does not admit of being transferred literally from the one sphere to the other,[5] and we can only decide

of its immediate effect, consist in the production of a definite character of will. That this is true also of the purification effected by tragedy admits of less doubt owing to the fact that precisely those emotions with which it has to deal (see *infra*) are here expressly connected with excitement, *i.e.* pity and fear.

[1] See preceding n. Similarly in *Poet.* c. 14, 1453, b, 10 the aim of tragic representation, which according to c. 6 consists in catharsis, is placed in a pleasure: *οὐ γὰρ πᾶσαν δεῖ ζητεῖν ἡδονὴν ἀπὸ τραγῳδίας, ἀλλὰ τὴν οἰκείαν. ἐπεὶ δὲ τὴν ἀπὸ ἐλέου καὶ φόβου διὰ μιμήσεως δεῖ ἡδονὴν παρασκευάζειν τὸν ποιητήν*, &c.

[2] Viz. *χαίρειν ὀρθῶς καὶ λυπεῖσθαι*, *Pol.* viii. 5, 1340, a, 15, 22; see p. 266, *supra*.

[3] This is the sense in which many writers in antiquity took purification, *e.g.* ARISTOXENUS (*Ph. d. Gr.* i. p. 714), Ps. JAMBL. *Myster. Aegypt.* p. 22, PROKL. in *Plat. Remp.* (*Plat. Opp.* Basil. 1534) p. 360, 362, PLUT. *Sept. Sap. Conv.* c. 13, p. 156 C. *Quæst. conviv.* III. 8, 2, 11, p. 657 A; cf. BERNAYS, *Grundzüge der Verlorenen Abhandlung d. Arist. über Wirkung der Tragödie* (*Abh. der Hist.-philos. Gesellschaft in Breslau 1.* 1858), p. 155 sqq. 199.; id. *Ueber die trag. Katharsis bei Arist.* (*Rhein. Mus.* xiv. 374 sq.)

[4] After Böckh had indicated, in 1830 (*Ges. kl. Schriften*, i. 180), this reference in *κάθαρσις* to medical purgation it was taken up first by A. WEIL (*Ueb. d. Wirkung der Trag. nach Arist. Verhandl. der* 10. *Vers. deutscher Philologen*, Bâle, 1848, p. 136 sqq.), more fully and independently of his predecessors by Bernays in the treatises mentioned in preceding note which go deeply into this question. These were followed by THUROT, *Etudes*, 104, and many others; cf. DÖRING, *ibid.* 278 sqq. who likewise resolutely defends this view, *ibid.* p. 248 sqq.

[5] On the other hand it cannot be supposed that Aristotle uses the word *κάθαρσις*, which he had coined to express a definite effect

how far he means to extend the analogy contained in it by a reference to other passages and to the whole scope of his doctrine. It seems probable that he took κάθαρσις, as we might use 'purgation,' in the first instance to mean the expulsion from the body of burdensome or injurious matter,[1] but that inasmuch as he was here dealing with the application of this conception to states of the emotions, he came to connect with it, as he went on, the idea of deliverance from pollution and spiritual disease as well [2]—just as in general one readily combines notions connected with the same expression in a confused compound without clearly discriminating them from one

of artistic representation, in the *Politics* of music in a different sense from that in which in the *Poetics* he employs it of tragedy, nor does *Pol.* viii. 7, 1341, b, 38 give the remotest justification to the presumption that the tragic catharsis is specifically different from the musical. The one may be produced by different means from the other, but the effect indicated by κάθαρσις must itself in both cases be essentially the same, unless we are to attribute to Aristotle a confusion of terms which is wholly misleading. STAHR, *Arist. und die Wirk. d. Trag.* p. 13 sq. 21 sq., does not sufficiently distinguish between these two.

[1] Aristotle's own expressions, *Polit.* viii. 7, 1342, a, 10, 14: ὥσπερ ἰατρείας τυχόντας καὶ καθάρσεως . . . πᾶσι γίγνεσθαί τινα κάθαρσιν καὶ κουφίζεσθαι μεθ' ἡδονῆς, the remark in Ps. JAMBL. *De Myst.* i. 11 that the emotions (δυνάμεις τῶν παθημάτων) ἀποπληροῦνται καὶ ἐντεῦθεν ἀποκαθαιρόμεναι . . . ἀποπαύονται, and in PROCL. *in Remp.* 362 that Aristotle objects to Plato that he was wrong in forbidding tragedy and comedy, εἴπερ διὰ τούτων δυνατὸν ἐμμέτρως ἀποπιμπλάναι τὰ πάθη καὶ ἀποπλήσαντας ἐνεργὰ πρὸς τὴν παιδείαν ἔχειν, τὸ πεπονηκὸς αὐτῶν θεραπεύσαντας all point to this.

[2] According to *Polit.* viii. 6, 1341, a, 21, orgiastic music is in place ἐν οἷς ἡ θεωρία [the representation] κάθαρσιν μᾶλλον δύναται ἢ μάθησιν, and c. 7, 1342, a, 9 ἰατρεία and κάθαρσις are attributed to ἐξοργιάζοντα τὴν ψυχὴν μέλη. A definite kind of religious music is therefore compared in its effect with medical purgation. Aristotle seems also to have employed the word ἀφοσίωσις, which refers to the cancelling of transgressions by offerings and other religious acts, to express the same effect. PROCL. *ibid.* p. 360 represents him as asking Plato why he rejected tragedy and comedy, καὶ ταῦτα συντελούσας πρὸς ἀφοσίωσιν τῶν παθῶν, and replying himself, p. 362, that it is not true that they serve as an ἀφοσίωσις.

another. This very notion of purgation, moreover, was one in which the ancients were unable to keep the ideas of healing and expiation distinct from one another.[1] All the more, however, are we bound to investigate the question as to the internal processes which according to Aristotle are the means and condition of the purification effected by art. So much we learn from his own utterances, that the purification consists in deliverance from some dominating excitement of passion or overwhelming mental depression;[2] and accordingly we must understand by the expression in the first instance not[3] any purification within the soul of permanent affections, but the removal from it of unhealthy ones.[4] When we ask

[1] Whoever is possessed of enthusiasm or any other violent and enslaving emotion which presses on him as a burden is *κατακώχιμος*, as Aristotle expresses it, *Pol.* viii. 7, 1342, a, 8. *κατακωχὴ* or *κατοκωχὴ*, however, is originally conceived of as *θεία κατοκωχὴ*, from which deliverance is to be obtained by reconciliation with God, the malady is a divine visitation, the cure is the result of propitiation (cf. PLATO, *Phædr.* 244 D sq.).

[2] In the words quoted, p. 311, n. 2, *supra*, from *Polit.* viii. 7, enthusiasm is spoken of as a form of excitement by which many persons are possessed (*κατακώχιμοι*), and of which, by means of orgiastic music, they are 'as it were cured and purified,' and the word *κουφίζεσθαι* is used to express the same effect.

[3] As Zeller formerly thought.

[4] The words *κάθαρσις τῶν παθημάτων* might themselves mean either a purification of the emotions or deliverance from them, for we may say either *καθαίρειν τινὰ τινὸς*, to purify one of something, or *καθαίρειν τὶ*, to purge away a defiling element. Medical language adopted this use of the word *κάθαρσις* from the time of Hippocrates (see REINKENS, p. 151 sq. who follows Foesius). It was transferred to the moral sphere, *e.g.* by Plato, in the *Phædo* 69 B, when he says that virtue is *κάθαρσίς τις τῶν τοιούτων πάντων* a deliverance from pleasure, fear, &c. Aristotle himself uses *κάθαρσις* in the sense of a 'purifying secretion,' *e.g.* *Gen. An.* iv. 5, 774, a, 1, where he speaks of a *κάθαρσις καταμηνίων*, *ibid.* ii. 4, 738, a, 28 of a *κάθαρσις τῶν περιττωμάτων* (for which, l. 27, *ἀπόκρισις* is used). These examples, combined with the passage referred to, n. 2 above, make it probable that *κάθαρσις τῶν παθημάτων* means a deliver-

How does Art effect this removal? we are told by some that it produces this result by engaging and satisfying in harmless excitements man's innate need of at times experiencing more violent emotions.[1] The peculiar character of the effect produced by art is not, however, to be thus easily explained. How is it that the cure is effected in this case by homœopathic and not as in other cases by allopathic treatment?[2] And why has the

ance from παθήματα. This view seems indeed inconsistent with the terms of the well-known definition of Tragedy (see p. 320, n. 4, *infra*) in which it is said that it effects by pity and fear τὴν τῶν τοιούτων παθημάτων κάθαρσιν; for it seems as though the emotions of pity and fear could not possibly be banished by exciting them. In answer to this, however, it has already been pointed out by others (as by REINKENS, p. 161) that the artificially excited emotions of tragic pity and fear serve to release us from the emotions (already, according to p. 311, n. 2, *supra*, existing in each in weaker or stronger form) of a pity and fear which are called forth by common facts, and that this is the reason why Aristotle writes τῶν τοιούτων παθημάτων instead of τούτων, the two kinds of pity and fear referred to being related to one another, but not identical. (On the other hand, the fact that he writes παθημάτων instead of παθῶν is unimportant, both words, as BONITZ, *Arist. Stud.* 5, H, has shown in opposition to BERNAYS, being used by Aristotle as perfectly synonymous.)

[1] Thus WEIL, *ibid.* 139; but even Bernays falls short here when he says that the catharsis effected by art is a discharge of solicited emotions: as purgative means produce health in the body by the expulsion of unwholesome matter, so purifying music produces a soothing effect by providing an outlet for the ecstatic element in us, &c. Cf. 171, 176, 164 and other passages in his treatise of 1858. Similarly his successors, *e.g.* DÖRING, who declares, p. 259, that κάθαρσις is 'an excretion of diseased matter by an increased production of it, or rather an acceleration of Nature's own heal ng process, which is already tending towards both these results;' and UEBERWEG, *Zeitschr. f. Phil. L.* 33 sqq. who says it is 'a temporary deliverance from certain feelings (which, according to Ueberweg, spring from a normal want) by the excitement and indulgence of them;' but he overlooks the fact that πάθημα does not mean every possible or even normal feeling (still less 'normal wants,' p. 33, and *Grundr.* i. 213; see Eng. Tr. *Hist. of Phil.* vol. i. p. 179), but only morbid or oppressive moods, and that it is only from such that we require to be 'purged.'

[2] *Eth.* ii. 2, 1104, b, 17 of punishments: ἰατρεῖαι γάρ τινές

artistic excitement and not any other excitement of the emotions the effect of producing peace and purification by the expulsion of the morbid matter, whereas the frequent recurrence of certain emotions in real life has rather the effect of producing an inclination to repeat them?[1] Aristotle did not overlook this circumstance; but if he observed it we may be quite sure that he also attempted to explain it. And this, as a matter of fact, he has done. The 'catharsis' is indeed effected in his view by exciting the emotions and is a homœopathic cure of them;[2] but this effect is not to be expected from all excitements indifferently, but only from such as are artistic—and by artistic Aristotle here means, as we clearly gather from his account of tragedy, not that which produces the most violent emotion in us, but that which produces emotion in the right way. Had the artificial catharsis depended in Aristotle's view merely upon the excitation of certain emotions and not also essentially upon the manner and means of exciting them, he must have sought for the criterion of a work of art, not in its contents and their proper treatment, but singly and solely in its effect upon the spectators. This he is far from doing.[3] We are forced, therefore,

εἰσιν, αἱ δὲ ἰατρεῖαι διὰ τῶν ἐναντίων πεφύκασι γίνεσθαι.

[1] Cf. *Eth.* ii. 1, 1103, b, 17 sqq.

[2] Tragedy by pity and fear effects the purification of these emotions (*Poet.* 6): sacred music by producing in us a state of mental excitement effects the cure and purgation of excitement (*Polit.* viii. 7, 1342, a, 4 sqq., cf. c. 5, 1340, a, 8 sqq. See p. 311, n. 2, *supra*).

[3] To mention only one thing, Aristotle cannot reiterate too often that both the action and the characters in a tragedy must evolve according to the laws of necessity and probability (*Poet.* 7, 1450, b, 32. *Ibid.* and c. 9, see p. 305, n. 4, *supra*, c. 10, 1452, a, 18, c. 15, 1454, a, 33 sqq.), and he blames the poets for abandoning the development which is demanded by the nature of the facts out of regard for the taste

to look for the reason why, according to Aristotle, the excitement of the emotions produced by Art has a soothing effect, whereas their excitement in real life is followed by no such result, in the peculiar nature of artistic representation itself—in other words, in that which constitutes the generic difference between art and reality. The latter presents us only with the particular, the former with the universal in the particular; in the latter chance largely rules, the former must reveal to us in its creations the fixity of law.[1] Aristotle certainly nowhere expressly says that this is the reason why art exercises a purifying influence; but if we would supplement the mutilated fragments of his theory of art which have come down to us in the spirit of the rest of his system we can hardly resist this conclusion. Art, we should then have to say, purifies and soothes the emotions in that it delivers us from such as are morbid or oppressive by exciting such as are subordinate to its law, directing them, not towards what is merely personal, but towards what is universal in man, controlling their course upon a fixed principle and setting a definite limit to their force.[2] Thus, for example, tragedy in the fate of its heroes gives us a glimpse into the universal lot of man and at the same time into an eternal law of justice;[3] music calms mental excitement and holds it

of the public (c. 9, 1451, b, 33 sqq.; cf. c. 13, 1453, a, 30 sqq.).

[1] See p. 304 sq. *supra*.

[2] We have at least a hint of this thought in the statement from Proclus, cited p. 313, n. 1, to the effect that tragedy and comedy serve as a cure of morbid states of feeling by rendering it possible ἐμμέτρως ἀποπιμπλάναι τὰ πάθη.

[3] According to *Poet.* c. 13, those who pass in it from fortune to misfortune must be neither the wholly innocent nor the wholly bad: they should be characters distinguished neither by merit nor wickedness, but standing

spellbound by its rhythm and harmony.[1] Although we do not know how Aristotle further developed this thought, still we are forced to assume that he expressed it somehow.[2]

If we now turn from these general views upon Art to the special arts, Aristotle himself provides us with different principles according to which they might have been classified. All art is imitation, but the means, the objects, and the manner of this imitation are different. The means of imitation are sometimes colour and form,

rather above than below the common standard of morality (ἢ οἷον εἴρηται, ἢ βελτίονος μᾶλλον ἢ χείρονος), μὴ διὰ μοχθηρίαν ἀλλὰ δι' ἁμαρτίαν μεγάλην. The tragedy must therefore be so constructed that we can put ourselves in the place of the hero, that we can say what happens to him might happen to each of us, while at the same time we feel that the fate which overtakes him is not wholly undeserved, but is brought on him by his own action, so revealing the laws of the moral order of the world. KOCK, *Ueb. d. Arist. Begr. d. Catharsis*, 1851, p. 11, strangely misunderstands the sense of this passage in holding that the purification of pity depends upon the thought that we do not need to pity the sufferer so immoderately, as he does not suffer wholly undeservedly; the purification of fear, on the conviction that we can avoid the misfortunes which overtake the hero if we avoid the mistake which has brought them in its train. If the effect of tragedy had consisted for Aristotle in this trite moral application he would have recommended above all those pieces which he so decidedly rejects (*ibid.* 1453, a, 1, 30)—those, namely, in which great transgressions are punished and virtue is rewarded, for in these the spectator has the tranquillising sense that he can avoid the penalty of transgression and reap the reward of virtue in a much higher degree. Aristotle is aware of the satisfaction which these moral reflections give, but says (*ibid.*) that they belong to the sphere, not of tragedy, but of comedy.

[1] STAHR (*Arist. und die Wirk. d. Trag.* 19 sqq.) curiously enough expresses himself as satisfied with Bernays' explanation on this head, and in this way involves himself in the difficulty of having to explain the catharsis, which Aristotle describes in like terms in connection with different arts, quite differently in one case and in the other. Cf. p. 312, n. 5.

[2] In this view Zeller is at one with BRANDIS, ii. b, 1710 sqq. iii. 163 sqq. and SUSEMIHL (*Arist. π. ποιητ.* 43 sqq.).

sometimes the voice, sometimes words, harmony, and rhythm; these means, moreover, are sometimes employed singly, at other times several of them are combined.[1] The chief objects of imitation are living and acting persons;[2] and these differ from one another in moral worth.[3] The manner (here, however, Aristotle is speaking of poetry only) differs according as the imitator himself speaks or brings forward other speakers; and in the former case according as he speaks *in propria persona*, or merely reports the words of others.[4] Aristotle, however, has not attempted to use these differences as the basis of any systematic division of the Arts as a whole. Upon the particular arts, moreover, with the exception of the art of poetry, very little has come down to us in his works: we have only a few occasional observations upon painting,[5] and a fuller discussion of music,[6] the chief contents of which have

[1] *Poet.* i. 1447, a, 16 sqq.

[2] μιμοῦνται οἱ μιμούμενοι πράττοντας, c. 2, 1448, a, 1. This statement suffers only slight modification from the passages quoted p. 304, n. 1 and 2, *sup.*, on the representation of particular natural objects. Aristotle would not therefore have recognised landscape painting, which in his time did not yet constitute an independent branch of art, as art at all.

[3] C. 2, see p. 305, n. 3, *supra*.

[4] *Poet.* c. 3 *init.* Aristotle here distinguishes, as Susemihl rightly observes, (*a*) μιμεῖσθαι ἀπαγγέλλοντα, (*b*) μιμεῖσθαι πάντας τοὺς μιμουμένους ὡς πράττοντας καὶ ἐνεργοῦντας. Drama is constituted by the latter; in (*a*) it is possible to imitate (1) ἢ ἕτερόν τι [τινα] γιγνόμενον (by assuming the part of another), (2) ἢ ὡς τὸν αὐτὸν καὶ μὴ μεταβάλλοντα. Under this second category, along with personal narration would fall also lyric poetry, although Aristotle nowhere expressly refers to it in the *Poetics* as we have received them. While very closely connected with Plato's division of the forms of artistic presentation, Aristotle's does not wholly coincide with it.

[5] *Poet.* 2, 15, see 305, n. 1 and 3, *supra*. *Pol.* viii. 5, *v.* vol. ii. p. 308, n. 2, *supra*; also *Pol.* viii. 3, *v.* vol. ii. p. 264, n. 3, *supra*.

[6] *Pol.* viii. 3, 1337, b, 27, c. 5–7.

already been given.[1] Finally, the extant portion of Aristotle's writings which deals with poetry limits itself almost entirely to tragedy. The art of poetry, we are told, sprang from the imitative instinct;[2] from the imitation of noble men and actions came epic poetry; from the imitation of ignoble, satire; subsequently as the form best adapted for the nobler poetry, tragedy was developed; as the best for satire, comedy.[3] Tragedy is the imitation of an important completed action, of a certain length, expressed in graceful style, which varies in the several parts of the piece, to be acted, not merely narrated, and effecting by means of pity and fear the purification of these emotions.[4] The first effect, therefore, of tragic poetry is to excite our sympathy by means of the fate of the actors: their sufferings claim our pity; the dangers with which they are threatened excite in us fear for the final issue—that tragic suspense which in the further development finds relief[5] at one time in

[1] *Sup.* vol. ii. p. 266 sqq. cf. p. 311, n. 1 & 2. While Aristotle here attributes to music especially (as is there shown) the power of representing moral qualities, yet he does not explain in the *Politics* the grounds of this advantage which it possesses over the other arts. In *Probl.* xix. 27, cf. c. 29 it is asked: *διὰ τί τὸ ἀκουστὸν μόνον ἦθος ἔχει τῶν αἰσθητῶν;* and the answer is given: because we perceive movements through the hearing alone, and the *ἦθος* expresses itself in actions, and therefore in movements. But this passage can hardly be Aristotle's.

[2] See p. 303, *supra*.

[3] C. 4, 5.

[4] C. 6, 1449, b, 24: *ἔστιν οὖν τραγῳδία μίμησις πράξεως σπουδαίας καὶ τελείας, μέγεθος ἐχούσης, ἡδυσμένῳ λόγῳ, χωρὶς ἑκάστου τῶν εἰδῶν ἐν τοῖς μορίοις* [*i.e.* as is immediately afterwards explained, so that the different kinds of *ἡδυσμένος λόγος*—*λέξις* and *μέλος*—are employed in the dialogue and chorus of the tragedy respectively; cf. c. 1 *fin*] *δρώντων καὶ οὐ δι' ἀπαγγελίας, δι' ἐλέου καὶ φόβου περαίνουσα τὴν τῶν τοιούτων* [on which see *supra*, p. 314, n. 4, *ad fin.*] *παθημάτων κάθαρσιν.*

[5] Since the time of LESSING (*Hamb. Dramat.* 75 *St.*) whom Zeller followed in the previous edition, the 'fear' in Aristotle's

an unfortunate, at another in a fortunate, turn of events.[1] But since the tragic poet sets before us in his heroes and in their fate universal types of human nature and life, our sympathies do not confine themselves to these particular characters, but extend to the common elements of human nature; and while thus on the one hand self-regarding humours akin to pity and fear are created in us by our participation in the experiences of the actors, on the other our own pain gives way before the feeling of others' pain, our personal woes are silenced at the spectacle of universal destiny, we are delivered from the oppressions that weigh on us, and our emotions find peace in the recognition of those eternal laws which the course of the piece reveals to us.[2] This

definition has been commonly understood of fear for ourselves excited by the thought that those whom we see suffering are like ourselves, and the fate which overtakes them might overtake us. This view rests partly on the observation that fear for the heroes of tragedy is already involved in pity, and that there is, therefore, no reason to make particular mention of it; partly on *Rhet.* ii. 5 *init.* ii. 8 *init.*, where *φόβος* is defined as *λύπη ἐκ φαντασίας μέλλοντος κακοῦ φθαρτικοῦ ἢ λυπηροῦ*, *ἔλεος* as *λύπη τις ἐπὶ φαινομένῳ κακῷ φθαρτικῷ καὶ λυπηρῷ τοῦ ἀναξιοῦ τυγχάνειν*. But it is not asserted that the fear refers only to such evils as threaten ourselves—any such assertion, indeed, would be wholly false; and, on the other hand, it holds also, as the distinction between fear for others and pity for them, that the former is excited by evils which are still future to them, the latter by those which have already befallen them. On the contrary, it is rightly objected to Lessing's explanation (SUSEMIHL, *Poet.* 57 sqq., and the authorities quoted by him), that according to Aristotle's own indubitable statement the primary object of tragic fear is not ourselves but others; for he says, *Poet.* 13, 1453, a, 4, of *ἔλεος* and *φόβος*: *ὁ μὲν γὰρ περὶ τὸν ἀνάξιόν ἐστιν δυστυχοῦντα, ὁ δὲ περὶ τὸν ὅμοιον, ἔλεος μὲν περὶ τὸν ἀνάξιον, φόβος δὲ περὶ τὸν ὅμοιον*. To this explanation there is the further practical objection that fear for ourselves produced by the spectacle of a tragedy would hardly be the proper means of delivering us from this same selfish fear.

[1] The latter, however, as is remarked c. 13, 1453, a, 12 sqq. 35 sqq., less to the character of tragedy than to that of comedy.

[2] See *supra*, vol. ii. p. 316 sq.

impression depends in the first place upon the nature of the events represented. These, therefore, are the important thing in every tragic representation. 'Myth,' as Aristotle says, is the soul of tragedy,[1] and accordingly he sets himself to investigate, in the first place, the qualities which are necessary in a tragedy that it may effect its end: viz. natural development,[2] proper length,[3]

To distinguish from this purifying effect of tragedy the moral effect as a second and different result (as UEBERWEG, *Zeitschr. f. Philos.* xxxvi. 284 sqq. does) seems to be incorrect. Although Aristotle, in treating of music, places παιδεία, διαγωγή, κάθαρσις side by side as co-ordinate aims (see p. 307, n. 2, *supra*) it does not follow that tragedy also has to pursue all these aims in like manner. On the contrary, as there is both a moral and a cathartic kind of music (*i.e.* one which directly affects the will, and one which primarily affects only the emotions and, through them, moral character), there may also be a kind of poetry whose primary aim is catharsis. We must assume that tragedy, according to Aristotle, is actually such a cathartic species of poetry, inasmuch as in his definition of it he must have given its aim in an essentially complete form if he gave it at all. It is quite compatible with this to attribute to tragedy a moral effect, but it is added as a second, which is co-ordinate with the cathartic, but follows from it as result, and consists in the peaceful state of feeling which is produced by the purification of the emotions and the habit of self-control which it creates in us.

[1] *Poet.* c. 6, where, *inter alia*, 1450, a, 15 (after the enumeration of the six elements in tragedy, μῦθος, ἤθη, λέξις, διάνοια, ὄψις, μελοποιΐα): μέγιστον δὲ τούτων ἐστὶν ἡ τῶν πραγμάτων σύστασις· ἡ γὰρ τραγῳδία μίμησίς ἐστιν οὐκ ἀνθρώπων ἀλλὰ πράξεως καὶ βίου καὶ εὐδαιμονίας καὶ κακοδαιμονίας . . . οὔκουν ὅπως τὰ ἤθη μιμήσωνται πράττουσιν, ἀλλὰ τὰ ἤθη συμπεριλαμβάνουσι διὰ τὰς πράξεις. ὥστε τὰ πράγματα καὶ ὁ μῦθος τέλος τῆς τραγῳδίας. L. 38: ἀρχὴ μὲν οὖν καὶ οἷον ψυχὴ ὁ μῦθος τῆς τραγῳδίας, δεύτερον δὲ τὰ ἤθη. Cf. c. 9, 1451, b, 27: τὸν ποιητὴν μᾶλλον τῶν μύθων εἶναι δεῖ ποιητὴν ἢ τῶν μέτρων. On the other hand, the effect produced by the mere spectacle (ὄψις) is declared to be that which has the least artistic value; *ibid.* 1450, b, 16.

[2] C. 7, see *supra*, vol. ii. p. 316, n. 3.

[3] This question is decided, *ibid.* 1450, b, 34 sqq., in like fashion to that in the *Politics* (see p. 259, n. 1, *supra*) as to the size of the State. The longer and richer presentation is in itself the more beautiful, provided that the plot does not suffer in clearness (τὸ εὐσύνοπτον) owing to its length; the true criterion here is: ἐν ὅσῳ μεγέθει κατὰ τὸ εἰκὸς ἢ τὸ ἀναγκαῖον ἐφεξῆς γιγνομένων συμβαίνει εἰς εὐτυχίαν ἐκ δυστυχίας

unity of treatment,[1] and the representation of events that are typical and of universal interest.[2] He distinguishes simple events from complicated ones, and those in which the change in the position of the characters is brought about by some recognition or by some reversal of fortune in the course of the piece.[3] Again he shows how myths must be treated in order to excite the emotions of pity and fear instead of those of moral indignation or satisfaction[4] or of mere wonder, and in order to produce this effect by means of these emotions themselves and not merely by means of the outward representation.[5] He further discusses what is required for proper character-painting[6] and composition,[7] passing finally to speak of the style of expression best adapted to tragedy.[8] We cannot, however, here linger over

ἢ ἐξ εὐτυχίας εἰς δυστυχίαν μεταβάλλειν.

[1] Of the so-called three Aristotelian unities of the French school, only the 'unity of action' is to be found, as is well known, in Aristotle himself; see *Poet.* c. 8; cf. c. 9, 1451, b, 33 sqq. c. 18, 1456, b, 10 sqq. The 'unity of place' he nowhere mentions, and on that of time he only remarks (c. 5, 1449, b, 12) that tragedy endeavours to compress the action into one day, or, at any rate, to keep as nearly as possible within this limit, but he gives no rule.

[2] C. 9; see *sup.* ii. 305, n. 4.

[3] C. 10, 11, 16, where ἀναγνώρισις and περιπέτεια are discussed. On the genuineness and position of c. 16, cf. SUSEMIHL, at p. 12 sq. of his ed.

[4] In this sense, viz. of the satisfaction of that moral feeling with the violation of which Nemesis (see *sup.* vol. ii. p. 169, n. 9) has to do, we may interpret τὸ φιλάνθρωπον which, according to Aristotle (c. 13, 1453, a, 3, c. 18, 1456, a, 21), attaches to the deserved misfortune of the transgressor. It is commonly taken (as it was by Lessing) to refer to the human interest with which we accompany even the transgressor in such a case; but Aristotle appears, especially c. 18, to find τὸ φιλάνθρωπον precisely in the punishment of wrong as such: one who wishes well to humanity can wish no good to its enemies.

[5] C. 13, 14.

[6] C. 17 sq.

[7] C. 15, on the text and arrangement of which see SUSEMIHL, p. 10, 13 sq.

[8] Λέξις c. 19–22, with which cf. MÜLLER, *ibid.* 131 sqq.

these technical details. With regard to the section dealing with narrative poetry,[1] with which the *Poetics*, as we have it, closes, we need only remark that Aristotle here also lays the main emphasis upon the unity of the action, finding in it the mark which separates epic poetry from history, which is the narrative of contemporaneous events without reference to their inner connection.[2] It is chiefly, moreover, on the ground of its greater unity that in comparing tragedy with epic poetry he assigns to the former the higher place as a form of artistic composition.[3] Of the remaining kinds of poetry the extant portions of Aristotle's work do not treat. Comedy alone is briefly touched upon in an earlier passage[4]; and cursory as are his allusions[5] to it, we can yet see from them that Aristotle was not inclined to concur in Plato's harsh estimate of its value.[6]

[1] C. 23–26.

[2] C. 23.

[3] C. 26.

[4] See *supra*, vol. ii. p. 304 sq.

[5] Supplementary to these (as was shown by BERNAYS) are some statements to be found in the editions of VAHLEN and SUSEMIHL, as was already remarked, vol. i. p. 102. Besides the quotations, *sup.* vol. i. p. 306, n. 3, p. 313, n. 1, the division of comedy into γέλως ἐκ τῆς λέξεως and γέλως ἐκ τῶν πραγμάτων is of especial interest in this connection. Cf. BERNAYS, *Rhein. Mus.* N. F. viii. 577 sqq.

[6] Plato had conceived in a general way of comedy only as the representation of deformity, and the pleasure produced by it as malignancy. Only in the *Laws* does he admit it as a means of moral education (see *Ph. d. Gr.* i. 800, 802). Aristotle admits that it has to do with human infirmity, but he adds that it deals only with harmless infirmities, and in demanding of it at the same time that it should devote itself not to the ridicule of particular persons but to depicting types of character, he opened the way to the recognition of it as a means of purifying and elevating natural sentiments. Whether Aristotle actually adopted this view, and whether he assigned to comedy a higher position than the music which, in *Polit.* viii. 7, 1342, a, 18 sqq., he withholds from the common people, cannot be positively decided.

# CHAPTER XVI

## RELIGIOUS ASPECT OF ARISTOTLE'S PHILOSOPHY

IN the preceding section we had to deal with a fragmentary account of a theory which Aristotle himself developed more fully. In the section now before us we have to deal with a subject which he has made no attempt to treat scientifically, but has only touched upon occasionally in detached passages. Aristotle has not any more than Plato a philosophy of Religion in the scientific sense;[1] his system even lacks those features which give to the Platonic philosophy, in spite of the severe criticisms which it passes on the existing religion, a peculiar religious character of its own. He does not require to fall back upon the popular faith, as Plato had done in his theory of myths, although at the same time, on the principle that universal opinion and unreflecting tradition are never without a certain truth,[2] he willingly makes use of the suggestions and links of connection which it supplies.[3] His scientific researches

[1] His view of the Divine Being, indeed, is set forth in the *Metaphysics*; but the question with which the philosophy of religion starts, as to the distinguishing characteristics of religion especially in its relation to philosophy, is nowhere fully investigated.

[2] See *supra*, vol. i. p. 256, n. 2, and p. 291, n. 5.

[3] For proofs of this, see *infra*.

do not exhibit that constant direct reference to the personal life and circumstances of men which in an especial degree gives to the Platonic philosophy its religious tone;[1] even in morals the motives which he assigns for action are strictly ethical and not religious. His whole view of the world rests upon the principle of explaining things as completely as may be by a reference to their natural causes; that the universe of natural effects must be referred to a Divine cause he never in the least doubts;[2] but as this affords no scientific explanation of them he never connects individual facts and events, as Plato so often does, with divine agency. The conception of Providence, common to Socrates and Plato, as of a divine activity exercised in individual cases, finds no place in Aristotle.[3] We miss, therefore, in his system that warm glow of religious feeling which in Plato has ever so strongly appealed to susceptible minds, and in comparison with which the Aristotelian philosophy seems to be cold and lifeless.

It would be wrong to deny or under-estimate the difference which exists in this respect between the two philosophers. They certainly treat their subject in a different spirit. The inner bond which in Plato unites philosophy with religion is not indeed completely severed in Aristotle, but it is so widely expanded as to give to science the freest scope in its own field. No attempt is ever made to answer scientific questions by means of religious presupposi-

[1] Cf. *Ph. d. Gr.* i. p. 793 sq. [2] See vol. i. p. 421 sq.
[3] Cf. *supra*, vol. i. p. 399 sq.

tions. On the other hand, all positive treatment of religion itself, as a science in the same sense as art or morality, is as far from Aristotle's thoughts as from Plato's. Different as is the attitude which each actually takes up with regard to religion, yet in their scientific views of it they approach very near to one another, the main difference in this respect being that Aristotle is more strictly logical in drawing conclusions whose premises are no strangers to Plato's thought. Aristotle, as we have already seen, is convinced like Plato of the unity of the Divine Being (in so far as we understand by this Deity in the proper sense of the word, or the highest efficient cause), of his exaltation above the world, of his immaterial and purely spiritual nature, and of his faultless perfection; and he strives to demonstrate with greater fullness and more scientific accuracy than his predecessor not only the existence but also the attributes of Deity. But while Plato had on the one hand identified God with the Idea of the Good, which can only be conceived of as impersonal, on the other he depicted his creative and governing activity in conformity with popular representations of it, and not without sundry mythical embellishments. This ambiguity is removed by his pupil, who defines the Divine Nature clearly and sharply on both sides: on the one hand God, as a personal supernatural Being, is guarded from all confusion with any merely universal conception or impersonal power; while on the other, as he is limited in his activity to pure thought and absolutely self-contained, and he operates upon the world only to set in motion the

outermost of the cosmic spheres.[1] Individual events do not therefore upon this view admit of being referred directly to divine causation. Zeus does not rain in order that the corn may grow or be destroyed, but because, according to universal laws of nature, the rising vapours cool and descend as water;[2] prophetic dreams are not sent by the gods to reveal to us the future, but, in so far as the question is here of causality at all and not merely of chance coincidence, they are to be referred as natural effects to physical causes[3] Nor is the case in any degree altered by the fact that between God above and earth beneath numerous other eternal beings find a place;[4] since the operation of those heavenly beings is likewise limited to causing the motion of their own sphere, any interference on their part with individual events of the kind that popular belief attributes to its gods and demons is out of the question. The essential truth of the belief in Providence, however, Aristotle does not certainly on this account resign. He also recognises in the order of the universe the operation of Divine Power and of rational design;[5] he believes especially that the gods care for men, that they interest themselves in those who live according to reason, and that happiness is their gift[6];

[1] See *supra*, vol. i. p. 388 sqq; cf. *Ph. d. Gr.* i. p. 785 sqq. 591 sqq.

[2] See *supra*, vol. i. p. 361, n. 1.

[3] See *supra*, vol. ii. p. 75 sq. *Div.* 1, 462, b, 20.

[4] See *supra*, vol. i. p. 494 sq.

[5] See vol. i. p. 420 sq.

[6] *Eth.* x. 9, 1179, a, 24: εἰ γάρ τις ἐπιμέλεια τῶν ἀνθρωπίνων ὑπὸ θεῶν γίνεται, ὥσπερ δοκεῖ, καὶ εἴη ἂν εὔλογον χαίρειν τε αὐτοὺς τῷ ἀρίστῳ καὶ τῷ συγγενεστάτῳ (τοῦτο δ' ἂν εἴη ὁ νοῦς) καὶ τοὺς ἀγαπῶντας μάλιστα τοῦτο καὶ τιμῶντας ἀντευποιεῖν ὡς τῶν φίλων αὐτοῖς ἐπιμελουμένους καὶ ὀρθῶς τε καὶ καλῶς πράττοντας. i. 10, 1099, b, 11: εἰ μὲν οὖν καὶ ἄλλο τι ἐστὶ θεῶν δώρημα ἀνθρώποις, εὔλογον καὶ τὴν εὐδαιμονίαν θεόσδοτον εἶναι καὶ

he also opposes the notion that God is envious, and might therefore, if he liked, withhold from man his best gift of knowledge.[1] But this Divine Providence coincides completely for Aristotle with the operation of natural causes;[2] all the more because in setting aside the Platonic eschatology he left no room for that direct agency of the Deity which Plato had so largely admitted into his pictures of the future life and its retributions. God stands according to Aristotle outside the world, engaged in solitary self-contemplation; he is for man the object of admiration and reverence;[3] the knowledge of him is the mind's highest aim;[4] in him lies the goal towards which, along with all finite things, man strives, and whose perfection excites his love.[5] But as man can expect no reciprocal love from God,[6]

*μάλιστα τῶν ἀνθρωπίνων ὅσῳ βέλτιστον.* viii. 14, 1162, a, 4: *ἔστι δ' ἡ μὲν πρὸς γονεῖς φιλία τέκνοις, καὶ ἀνθρώποις πρὸς θεούς, ὡς πρὸς ἀγαθὸν καὶ ὑπερέχον· εὖ γὰρ πεποιήκασι τὰ μέγιστα.*

[1] *Metaph.* i. 2, 982, b, 32 (see *sup.* vol. ii. 163, 3): *εἰ δὴ λέγουσί τι οἱ ποιηταὶ καὶ πέφυκε φθονεῖν τὸ θεῖον, ἐπὶ τούτου συμβαίνειν μάλιστα εἰκός .... ἀλλ' οὔτε τὸ θεῖον φθονερὸν ἐνδέχεται εἶναι,* &c. Cf. *Ph. d. Gr.* i. 602, 1, 787, 1.

[2] *Eth.* i. 10: Aristotle continues: *φαίνεται δὲ κἂν εἰ μὴ θεόπεμπτός ἐστιν ἀλλὰ δι' ἀρετὴν καί τινα μάθησιν ἢ ἄσκησιν παραγίνεται τῶν θειοτάτων εἶναι· τὸ γὰρ τῆς ἀρετῆς ἆθλον καὶ τέλος ἄριστον εἶναι φαίνεται καὶ θεῖόν τι καὶ μακάριον.* If we compare with this the passage quoted from *Eth.* x. 10 on p. 156, n. 4, *supra.* we shall see that the happiness which is *θεόσδοτος* consists merely in the moral and spiritual capacities of man—in the natural possession of reason in which he has still to secure himself by actual study and practice.

[3] *Metaph.* xii. 7 (see *supra*, vol. i. p. 184, n. 1). SENECA, *Q. N.* vii.: *egregie Aristoteles ait, nunquam nos verecundiores esse debere quam cum de Dis agitur.*

[4] The Divine Being is the highest object of thought (see *supra*, vol. i. p. 398 n. 2), and theology therefore (vol. i. p. 184, n. 1), the highest branch of philosophy.

[5] Cf. vol. i. p. 404, sqq.

[6] See *supra*, vol. i. p. 398, n. 1, which places the passage quoted, p. 328, n. 6, *supra*, from *Eth.* viii. 14 in the proper light; there is a love (*φιλία*) of men towards the gods, but not *vice versa*.

neither can he experience any influence from him which would be different from that of natural causes, and his reason is the only means whereby he enters into direct communion with him.[1]

Holding these views, Aristotle could not concede to the popular religion the same significance which Plato did. That it must certainly have its own truth, followed for him from his view of the historical evolution of mankind and the value of common opinion. Universal conviction is for him of itself a mark of truth,[2] all the more so when we are dealing with convictions which have been transmitted by mankind from time immemorial. Since the world, according to Aristotle, is eternal, the earth must be so also; and if the earth is so, man must be so as well.[3] But all parts of the globe undergo continual change,[4] and one of the consequences of this is that man's development does not proceed in an unbroken line but is ever and anon interrupted by relapses into a state of primitive barbarism and ignorance,[5] from which a fresh start must be made in the cyclic process of creation.[6] In this way all knowledge and all art have been lost and rediscovered times without number, and similar notions have recurred to mankind, not once or twice but with incalculable frequency. Nevertheless, a certain recol-

[1] Cf. on this point, *supra*, vol. i. p. 329, n. 2, and p. 403 sqq.

[2] See *supra*, vol. i. p. 291, n. 5.

[3] Cf. *supra*, vol. ii. p. 32, n. 1.

[4] See *supra*, vol. ii. p. 29 sq.

[5] Cf. *Polit.* ii. 8, 1269, a, 4: εἰκός τε τοὺς πρώτους, εἴτε γηγενεῖς ἦσαν εἴτ' ἐκ φθορᾶς τινος ἐσώθησαν, ὁμοίους εἶναι καὶ τοὺς τυχόντας καὶ τοὺς ἀνοήτους, ὥσπερ καὶ λέγεται κατὰ τῶν γηγενῶν, ὥστ' ἄτοπον τὸ μένειν ἐν τοῖς τούτων δόγμασιν.

[6] Cf. *Phys.* iv. 14, 223, b, 24: φασὶ γὰρ κύκλον εἶναι τὰ ἀνθρώπινα πράγματα.

lection of particular truths has been retained amid the changes in man's condition, and it is these remnants of departed knowledge that, according to Aristotle, form the kernel of mythical tradition.[1] Even the popular faith, therefore, has its roots in the search for truth, whether we trace it back to that intuition of the divine which even Aristotle is unwilling to contradict,[2] and to those experiences which he regarded as the source of the popular theology,[3] or whether we trace it to a tradition which, as a remnant of an older science or religion, must yet in the end have its roots in human reason. More particularly there are two truths which Aristotle, like Plato, finds to be contained in the popular belief of his country: first, that God exists; and secondly, that the stellar universe is in its nature divine.[4] With the further details of Greek mythology,

[1] *Metaph.* xii. 8; see p. 508, n. 2, *supra*. *De Cœlo* i. 3; *Meteor.* i. 3, 339, b, 19: it is not we alone who have this view of the πρῶτον στοιχεῖον as the substance of the celestial world, φαίνεται δ' ἀρχαία τις ὑπόληψις αὕτη καὶ τῶν πρότερον ἀνθρώπων .... οὐ γὰρ δὴ φήσομεν ἅπαξ οὐδὲ δὶς οὐδ' ὀλιγάκις τὰς αὐτὰς δόξας ἀνακυκλεῖν γινομένας ἐν τοῖς ἀνθρώποις, ἀλλ' ἀπειράκις. *Polit.* vii. 10, 1329, b, 25: σχεδὸν μὲν οὖν καὶ τὰ ἄλλα δεῖ νομίζειν εὑρῆσθαι πολλάκις ἐν τῷ πολλῷ χρόνῳ, μᾶλλον δ' ἀπειράκις, as like needs and states must always have led to the same discoveries.

[2] *De Cœlo*, ii. 1 *fin.*: Aristotle's view of the eternity of the world is not only truer in itself, ἀλλὰ καὶ τῇ μαντείᾳ τῇ περὶ τὸν θεὸν μόνως ἂν ἔχοιμεν οὕτως ὁμολογουμένως ἀποφαίνεσθαι συμφώνους λόγους. Cf. the appeal to πάτριοι λόγοι, *ibid.* 284, a, 2. *Metaph.* xii. 8, see *supra*, vol. i. p. 508, n. 2.

[3] See *supra*, vol. i. p. 390, n. 3.

[4] The first hardly requires proof; see, however, the quotations, vol. i. p. 390, n. 3, 4, from Sextus and Cicero, and p. 395, n. 6, from the treatise *De Cœlo*, i. 9; in the latter passage a trace of true knowledge is discovered in the name αἰών, just as elsewhere in that of the 'aether' (καὶ γὰρ τοῦτο τοὔνομα θείως ἔφθεγκται παρὰ τῶν ἀρχαίων). In support of his doctrine of the divinity of the heavens and of the stars, Aristotle appeals to the existing religion in the passage just referred to.

on the other hand, with all the doctrines aud stories which transfer the properties and weaknesses of human nature to the gods—in a word, with the whole range of anthropomorphic theology—Aristotle is as completely out of sympathy as Plato was; the only difference is that he no longer considers it necessary, as Plato had done, expressly to confute such representations, but treats them simply as preposterous fables.[1] If we ask how those false elements have found their way into the popular faith, Aristotle refers us to the inherent tendency in mankind to anthropomorphic representations of the gods,[2] which offended even Xenophanes,[3] or to the fact that statesmen had accommodated themselves as a matter of policy to this tendency, and used it for their own ends. Even ancient tradition, he says,[4] recognises that the heavens and the heavenly bodies are gods, and that the whole world is encircled by divinity. 'All else, however, is mythical embellishment, devised to attract the multitude, to aid legislation, and to forward the common interest.' While therefore Plato had permitted the legislator to employ myths (the origin of

[1] *Metaph.* xii. 8; see p. 508, n. 2, *supra*. *Ibid.* iii. 2, 997, b, 8; see vol. i. p. 315, n. 2, c. 4, 1000, a, 18: ἀλλὰ περὶ μὲν τῶν μυθικῶς σοφιζομένων οὐκ ἄξιον μετὰ σπουδῆς σκοπεῖν. *Poet.* 25, 1460, b, 35: a poetic representation is justified by its correspondence either with the ideal or with the actual; εἰ δὲ μηδετέρως, ὅτι οὕτω φασίν, οἷον τὰ περὶ θεῶν. ἴσως γὰρ οὔτε βέλτιον οὕτω λέγειν, οὔτ' ἀληθῆ, ἀλλ' ἔτυχεν ὥσπερ Ξενοφάνης· ἀλλ' οὖ φασι τάδε.

[2] *Polit.* i. 2, 1252, b, 24: καὶ τοὺς θεοὺς δὲ διὰ τοῦτο πάντες φασὶ βασιλεύεσθαι, ὅτι καὶ αὐτοὶ οἱ μὲν ἔτι καὶ νῦν οἱ δὲ τὸ ἀρχαῖον ἐβασιλεύοντο· ὥσπερ δὲ καὶ τὰ εἴδη ἑαυτοῖς ἀφομοιοῦσιν οἱ ἄνθρωποι, οὕτω καὶ τοὺς βίους τῶν θεῶν. This deduction of the belief in a sovereign of the gods is all the more remarkable, because Aristotle might equally well have himself found in that tradition a proof of the unity of God.

[3] Cf. *Ph. d. Gr.* i. 490.

[4] In the passage quoted from *Metaph.* xii. 8, in vol. i. p. 508, n. 2.

which he did not explain) as pædagogic lies in the interest of the State,[1] Aristotle goes a step farther, and thus comes a step nearer the view of sophistic free-thinking as to the origin of religion,[2] in maintaining that these myths, or at least a great part of them, had been from the beginning invented for no other purpose. This, indeed, is what we should expect from the strictness with which he himself excludes all that is mythical from his scientific investigations, his refusal to introduce religious considerations into his naturalistic view of the world,[3] and the exclusiveness with which he relies in his *Ethics* upon moral motives to the neglect of the religious. Religion itself, indeed, he always treats as an absolute moral necessity. The man who doubts whether the gods have a claim on our reverence or not is a fit subject, he says,[4] not for instruction but for punishment, just as would be the man who might ask whether his parents have a claim upon his love. As in his system the world cannot be thought of apart from God, so neither can man apart from religion. But to rest this religion upon such palpable fables as the myths of the popular belief can be justified only on the ground of the aforesaid political expediency.[5] Aristotle himself sometimes makes use of these myths, as of other popular opinions, in order to point to some

[1] See *Ph. d. Gr.* i. 792.

[2] *Ibid.* i. 1010 sq.

[3] The expression is used in no depreciatory sense, but as indicating the view that everything in the world is the effect of natural causes.

[4] *Top.* i. 11, 105, a, 5, cf. *Eth.* viii. 16, 1163, b, 15, ix. 1, 1164, b, 4, and *supra*, vol. ii. p. 329, n. 3.

[5] It is possible, indeed, that if he had completed the discussion of education in the best state, he would have accepted Plato's doctrine, that myths were indispensable in education, as easily reconcileable with the argument.

universal truth embodied in them,[1] just as he likes to trace back scientific assumptions to their most insignificant beginnings, and to pay respect to popular sayings and proverbs.[2] But apart from the few universal principles of religion embodied in mythology, he ascribes to it no deeper significance; and just as little, on the other hand, does he seem to aim at its purification. He presupposes for his State the existing religion,[3] just as personally he did not renounce its

[1] Thus *Metaph.* i. 3, 983, b, 27, c. 4 *init.* xiv. 4, 1091, b, 3. *Phys.* iv. 1, 208, b, 29, hints of certain scientific views of the world are discovered in the cosmogonic myths of Hesiod and other poets; *Meteor.* i. 9, 347, a, 5 the Oceanus is interpreted of the air-current that encircles the earth; the myth of Atlas proves that its inventors, with later philosophers, attributed weight to the heavens (*De Cœlo*, ii. 1, 284, a, 18, in the treatise *De Motu Anim.* 3, 699, a, 27, Atlas is interpreted to mean the world's axis; the same treatise, c. 4, 699, b, 35, finds in Homer's lines upon the golden chain a reference to the immobility of the *primum movens*); Aphrodite is said to have obtained this name because of the frothy character of the semen (*Gen. An.* ii. 2 *fin.*); Ares was united with this goddess by the first inventors of this myth because warlike natures, as a rule, exhibit amorous propensities (*Pol.* ii. 9, 1269, b, 27); in the fable which tells how the Argonauts had to leave Heracles behind there lies a true political observation (*Polit.* iii. 13, 1284, a, 22); the story that Athene threw away the flute expresses the truth that this instrument is unnecessary for mental culture (*Polit.* viii. 6, 1341, b, 2); the worship of the Graces points to the necessity of reciprocity (*Eth.* v. 8, 1133, a, 2); the number three derives its significance in the popular religion from the fact that it is the first number which has beginning, middle, and end (*De Cœlo*, i. 1, 268, a, 14).

[2] Thus, *H. An.* vi. 35, 580, a, 15, ix. 32, 619, a, 18 he quotes several myths about animals; in the fragment from the Eudemus (PLUT. *Cons. ad Apoll.* c. 27 fr. 40) he makes use of the story of Midas and Silenus; on his predilection for proverbs, cf. *supra*, vol. i. p. 256, n. 2.

[3] As is obvious from *Polit.* vii. 8, 1328, b, 11, c. 9, 1329, a, 29, c. 12, 1331, a, 24, c. 16, 1335, b, 14. But that he went so far in his zeal for religion as to assign the fourth part of the land collectively to the priesthood for the support of religion cannot be concluded (as has been suggested in *Ferienschr.* N. F. i. 303) from *Polit.* vii. 10, 1330, a, 8. Aristotle says indeed here that the land should be divided into pub-

rites, and expressed his dependence on friends and relatives through the forms which it had consecrated;[1] but of the Platonic demand for the reform of religion by philosophy we have not a trace in him, and in his *Politics* he admits into the existing cultus things which he disapproves of in themselves.[2] Aristotle's philosophy stands thus as a whole in the loosest relation to positive religion. It takes advantage of its ideas as links of literary connection, but makes no further use of them. Just as little, however, does it desire to see religion purified or reformed; on the contrary, it seems to accept its imperfections as something which could not possibly be otherwise. Each stands to the other in an attitude of essential indifference; philosophy goes its own way, without much troubling itself about religion, or fearing from it any interruption in the prosecution of its own work.

lic and private, and the latter again into two parts for the support of religion and the syssitia respectively, but he does not say that these parts should be of the same size.

[1] Cf. in this reference the quotations on the subject of his votive offerings and gifts to the dead, in chap. i. *ad fin.*

[2] *Polit.* vii. 17, 1336, b, 3: ὅλως μὲν οὖν αἰσχρολογίαν ἐκ τῆς πόλεως, ὥσπερ ἄλλο τι, δεῖ τὸν νομοθέτην ἐξορίζειν . . . ἐπεὶ δὲ τὸ λέγειν τι τῶν τοιούτων ἐξορίζομεν, φανερὸν ὅτι καὶ τὸ θεωρεῖν ἢ γραφὰς ἢ λόγους ἀσχήμονας. ἐπιμελὲς μὲν οὖν ἔστω τοῖς ἄρχουσι μηθὲν μήτε ἄγαλμα μήτε γραφὴν εἶναι τοιούτων πράξεων μίμησιν, εἰ μὴ παρά τισι θεοῖς τοιούτοις οἷς καὶ τὸν τωθασμὸν ἀποδίδωσιν ὁ νόμος· πρὸς δὲ τούτοις ἀφίησιν ὁ νόμος τοὺς ἔχοντας ἡλικίαν πλέον προήκουσαν καὶ ὑπὲρ αὐτῶν καὶ τέκνων καὶ γυναικῶν τιμαλφεῖν τοὺς θεούς. The latter admission clearly shows how Aristotle endeavoured to make things which he disapproved of and only unwillingly permitted, at least as harmless as possible.

# CHAPTER XVII

## RETROSPECT

THE peculiar traits of the Aristotelian philosophy are due to the fusion in it of the two elements to which attention was called at the outset,[1] namely the dialectic or speculative, and the empirical or realistic. On the one hand the system finds the true essence of things to consist in immaterial form, true knowledge of them in the apprehension of their concept; on the other hand, it insists that the form should not be conceived of as a transcendental 'idea' existing apart from things, and that it is the individual, and not the universal notion or genus, that is the ultimate reality. It therefore represents experience as the only source of concepts, which are obtained, not by turning away from the actual to an ideal world, but by apprehending in their essence the data of experience themselves; thus, while pursuing the dialectic development of the concept, it unites with it a comprehensive observation of the facts. Both traits have their roots equally in the intellectual capacity of its author, whose greatness just consists in this rare union in equal measure of qualities which in most men are found to be mutually exclusive of one another: the

[1] Vol. i. p. 170 sqq.

faculty, namely, of philosophic thought and the power of accurate observation applied with living interest to the world of fact. Hitherto these elements have been combined in very different proportions in philosophy. In the school of Socrates and Plato the art of developing the concept had far outstript the power of appreciating the fact. They had directed attention to what is inward in man to the neglect of the outward world, and had regarded thought itself as the immediate source of our truth. Thought, that is to say, conceptions, stood for what was absolutely certain, the criterion by which the truth of experience was to be tested. The strongest expression of, as well as the most remarkable deduction from, this theory is to be found in the Platonic doctrine of Ideas. Aristotle indeed shares the general presuppositions of this idealistic philosophy; he also is convinced that the essence of things is only known by thought, and consists only in that which is the object of our thought, or, in other words, in the form and not in the matter. He justly takes exception, however, to the transcendental character of the Platonic Ideas. He cannot conceive of the form and the essence as existing separately from the things whose form and essence they are. Reflecting further that our own conceptions are not independent of experience in their origin, he is the more convinced of the error of the Platonic separation between the Ideas and the phenomena. In place, then, of the doctrine of Ideas he presents us with an essentially new view. It is not the genus but the individual which, according to Aristotle, constitutes the substantial reality; the form does not exist as a universal *apart from*

the thing, but *in it* as the special form of this or that particular. While the general principle upon which the Platonic Idealism is founded is thus retained, the special development of it into the doctrine of Ideas is rejected. The 'Idea,' which Plato had conceived of as transcendental and supersensible, has a new place assigned to it as the formative and efficient principle in the phenomenal world. As the inner essence of things, it is sought for in the facts themselves, as these present themselves to us in experience. The Aristotelian doctrine may thus be described as alike the completion and the confutation of the Platonic. It confutes it in the form which Plato had given to it: yet at the same time it develops his fundamental thought still more fully and logically than Plato himself had done, in that it attributes to form not only, with him, complete and primary reality, but also a creative force to produce all else that is real. Aristotle, therefore, traces the potency of thought much deeper than Plato had been able to do throughout the whole field of phenomena.

From this fundamental principle all the leading doctrines of the Aristotelian philosophy logically follow. Since the universal cannot exist apart from the individual it cannot form an independent reality by itself, the individual alone has substantial reality. And since the form is conceived of, not as absolute essence, abstracted from phenomena, but as the efficient cause which works in them, it cannot stand as it does in Plato in a relation of mere opposition to that which is the substratum of phenomena—namely, matter. If form is the absolutely real, matter cannot be the absolutely un-

real and non-existent; for, in order that form may be able to realise itself in the matter, there must exist between the two a kinship or positive relation as well as the apparent antagonism. So matter is merely unrealised form, it is the potentiality of which form is the actuality.[1] From this mutual relationship arises motion, and with it all natural life, all growth and decay, all change and transmutation. But since the two principles of form and motion stand originally towards one another in a relation of mere antagonism and opposition, this relation itself, or in other words motion, presupposes for form an absolute existence; if it is the cause of all motion, it must itself be unmoved, and precede all that is moved—if not in order of time, at least in the logical order of reality. From the sum of the forms which are embodied in matter we must therefore distinguish the *primum movens*, or God, as pure form or pure reason whose only object is itself. Since all motions proceed from form, they must all be striving towards a certain definite form as their goal. There is nothing in nature which has not its own indwelling end; and since all motion leads us back to a primary source of movement, the sum total of things is subordinate to some highest end, and constitutes an organic whole—in other words, an ordered world. But since form operates in matter which only gradually develops into that which it is destined to become, the formal design can only realise itself under manifold restraints, and in conflict with the resistance of matter, at one time with greater at another with less perfection. Thus the

[1] Cf. p. 340 sqq., vol. i.

world is composed of many parts, which vary infinitely in worth and beauty; these again fall apart into the two great sections of heaven and earth, of which the former exhibits a gradual diminution, the latter, contrariwise, a gradual increase in perfection. But while all parts of the world down to the most imperfect and insignificant are essential elements in the whole, still the definite and peculiar character of each has a claim upon our regard, and accordingly it is not less in harmony with the demands of the system than with the personal inclinations of its author to investigate great things and small alike with scientific thoroughness, and to treat nothing with contempt as if it were insignificant and worthless for science.[1] This does not, of course, exclude such degrees of importance among things themselves as Aristotle has sought to point out in the sphere, for example, of animate nature. So among mundane beings the first place is assigned to man, since in him alone spirit reveals itself as spirit. The chief end of man, therefore, consists in the cultivation and exercise of his spiritual capacities: in other words, scientific knowledge and moral will are the essential conditions of happiness. But as no work is possible without appropriate material, it is impossible for man to dispense with external aids for the realisation of his end; and as all things develop into that which they are capable of becoming only by a gradual process, so in the spiritual life of man there is exhibited a gradual process of development. Thus from sense perception spring imagination and

[1] See on this head, vol. i. p. 167, n. 3, p. 169, n. 3, and also PLATO's statements noted, *Ph. d. Gr.* i. p. 665.

memory, from these arises thought; natural capacity precedes moral action, practice and habit precede moral knowledge; reason appears first as passive and as entangled in the lower faculties of the soul before it realises itself as active in the purity of its being. The highest perfection of our spiritual life consists, however, in scientific contemplation, for here alone reason is in immediate contact with the pure forms of things, while at the same time it is beyond question that reason cannot confine itself to the immediate knowledge of first principles, but methodically pressing forward from phenomena to conceptions, and tracing causes to their effects, must finally embrace the whole sphere of reality.

This short survey has already shown us in the Aristotelian system a well-planned doctrinal structure, the outlines of which are drawn with a firm hand in accordance with one fundamental thought. The care and consistency with which the design is executed down to the minutest detail is manifest from the whole preceding account. It is nevertheless true that, as we have already had frequent occasion to remark, all the joints of the fabric are not equally secure; and the ultimate source of this defect must be sought for in the fact that the foundations of the whole have not been laid sufficiently deep. Putting aside all those points in which the want of experimental knowledge has led Aristotle to draw false conclusions and put forward untenable explanations, and limiting ourselves merely to the question of the self-consistency of his doctrine, without entering upon that of its absolute truth, we cannot deny that Aristotle has failed to unite the

chief points of view in his system in a manner free from self-contradiction. Just as in his scientific procedure dialectic and observation, the speculative and the empirical elements, are not equally balanced, but the *a priori* method common to Socrates and Plato continually re-asserts itself over the more strictly empirical,[1] so also in his metaphysical speculations we detect a similar phenomenon. There is nothing in the Platonic system which is so distasteful to him as that dualism between Idea and phenomenon which expressed itself sharply in the doctrine of the absolute existence of the Ideas, and of the non-reality of matter. His opposition to this dualism is the key-note of his whole reconstruction of the Platonic metaphysics and of the fundamental ideas peculiar to his own system. And yet, earnest and thorough as are his efforts to overcome it, he has not, after all, succeeded in doing so.

He denies Plato's doctrine that universal class notions possess substantial reality; but he asserts with him that all our conceptions are of the universal, and depend for their truth upon the reality of their object.[2] He combats the transcendental character of the Platonic Ideas and the dualism between Idea and phenomenon. But he himself leaves form and matter in a like fundamental opposition to one another, in that he fails to trace them back to a common source; and the further development of these two principles involves him in the contradiction[3] of maintaining that the essence and substance of things is in the form, which at the same time

See *sup.* vol. i. p. 175 sq p. 258, sqq. [2] Cf. vol. i. p. 334 sqq.
[3] On which cf. vol. i. p. 372 sqq.

is a universal, and yet that the source of individuality and therefore also of substantiality must be the matter. He takes exception to Plato's doctrine on the ground that his Ideas contain no principle of motion; nevertheless his own account of the relation between form and matter leaves all actual motion equally unexplained. He places God as a personal being outside the world; but lest he should derogate in anything from his perfection, he thinks it necessary to deny to him the essential conditions of personality. So, to escape involving him in the transmutations of finite things, he limits God's operation (herein contradicting the more living idea of God which he elsewhere entertains) to the production of motion in the outer cosmic sphere, and so pictures that activity to himself, as to assign spatial existence to the Deity.

Connected with this is the obscurity which surrounds his conception of Nature. In the spirit of antiquity he describes Nature as a single being who operates with a purpose, as a rational all-efficient power: and yet his system supplies no subject of which these attributes may be predicated.[1] Far as Aristotle has advanced beyond the superficial teleology of Socrates and Plato, he has none the less failed actually to solve the opposition between physical and final causes;[2] and while we must admit that the problem with which he is here face to face is one that still taxes our resources, and that we cannot therefore reproach him with having failed to solve it, it is yet curious to note how easily the two prin-

[1] Cf. with the above remarks vol. i. p. 420 sq.

[2] As will be obvious from p. 358 sqq. p. 464 sqq. and p. 17, *sup.*

ciples which he had posited at the outset of his philosophy of nature might in the sequel become mutually contradictory and exclusive of one another. A further difficulty arises in connection with the Aristotelian account of animate nature, and especially of man, inasmuch as it is hard to discover any inner principle of union between the various elements of the soul, and harder still to explain the phenomena of its life, if, like every other moving force, the soul is held to be itself unmoved. The difficulty, however, becomes greatest when we ask how we are to comprehend in the unity of personal life the reason of man and the lower faculties of his soul, and to determine the share of the former in his spiritual acts and states; how we are to conceive of what is passive and incorporeal as at the same time part of a soul which by its very definition is the 'entelechy' of the body, and to assign to personality its place between the two constituent parts of human nature of which the one transcends it while the other sinks below it.[1]

Turning finally to his Moral Philosophy, we find that here also Aristotle strove with much success to correct the one-sidedness of Socrates and Plato. He not only contradicts the Socratic doctrine that Virtue is Knowledge, but sets aside also Plato's distinction between ordinary and philosophic Virtue. To him, all moral qualities are a matter of the Will, and have their primary source not in instruction but in habit and education. Nevertheless in the account of the intellectual virtues there reveals itself an unmistakable vacillation as to

[1] P. 119 sqq.

the relation in which moral knowledge stands to moral action, while in the preference for theoretic over practical activity[1] (which follows indeed quite logically from the Aristotelian doctrine of the soul) there reappears the same presupposition which lay at the root of the very views that Aristotle controverted. So, too, even in his political philosophy, however deep its insight in other respects into the actual conditions of social life, and however great its superiority to Plato's political idealism, we yet find remnants of the old idealism —if not so much in the picture of the best State, yet in that distinction between true and false forms of government the untenableness of which becomes manifest by the ambiguous position which the doctrine itself assigns to 'polity.'[2] There thus runs through every part of the Aristotelian system that *dualism* which it had inherited from Plato, and which, with the best intentions, it never succeeded, after it had once accepted it as one of its fundamental principles, in wholly overcoming. The more earnestly, on the other hand, Aristotle strives to transcend this dualism, and the more unmistakable the contradictions in which he involves himself by his efforts, the clearer it becomes how heterogeneous are the elements which are united in his philosophy, and how difficult the problem which Greek philosophy had to face when once the opposition between idea and phenomenon, spirit and nature, had been brought so clearly and sharply into view as it was in the Platonic doctrine.

[1] Cf. p. 142 sq., *supra*, and the proposition (p. 396, vol. i.) that only theoretic activity belongs to God—which Aristotle expressly applies to Ethics.

[2] See p. 243, *supra*.

Whether Aristotle provided the means of satisfactorily solving this problem, and what attempts in this direction were made by the later schools, it will be the task of this work to investigate as it proceeds. Those early followers who continued to build on Aristotelian foundations and who belonged to the Peripatetic school, could not be expected to find a more satisfactory answer to the main problem than Aristotle himself had succeeded in finding. Aristotle's own conclusions were much too deeply rooted in the fundamental presuppositions of his system to permit of their being altered without a reconstruction of the whole. Yet on the other hand, thinkers so keen and independent as the men of this school continued to be, could not shut their eyes to the difficulties of the Aristotelian doctrine, and it was therefore natural that they should devise means of escaping them. But since these difficulties ultimately arose from the fact that idealism and observation, a spiritual and a naturalistic view, had been united without being completely reconciled, and since such a reconciliation was impossible on the given premises, there was no way of solving the contradiction but by the suppression of one of its terms. It was, however, to be expected in the circumstances that the scientific should obtain the preference over the dialectic element, for it was the former that constituted the distinguishing characteristic of the Aristotelian school in opposition to the Platonic, and the new interest thus implanted in it by its founder naturally exercised a stronger fascination than the older doctrine of Ideas which had been handed down by the common tradition from Socrates and Plato. It was just this

side of the Aristotelian system which might be expected chiefly to attract those who gave their allegiance to the later philosophy, and so to have an undue prominence assigned to it in subsequent deductions from Aristotelian ideas. The further development of the Peripatetic school corresponds to this expectation. Its most important result in the immediately succeeding period was to bring the purely naturalistic view of the world more and more into prominence, to the neglect of the spiritual side of things.

# CHAPTER XVIII

## THE PERIPATETIC SCHOOL: THEOPHRASTUS

AMONG the numerous pupils of the Stagirite, Theophrastus occupies the first place.[1] Born at Eresos in Lesbos,[2] he came early (perhaps even before the death of Plato) into connection with Aristotle,[3] from whom in

[1] DIOG. v. 35: τοῦ δὴ Σταγειρίτου γεγόνασι μὲν πολλοὶ γνώριμοι, διαφέρων δὲ μάλιστα Θεόφραστος. SIMPL. *Phys.* 225, a. and: τῷ κορυφαίῳ τῶν Ἀριστοτέλους ἑταίρων Θεοφράστῳ; id. *Categ. Schol. in Ar.* 92, b, 22: τὸν ἄριστον τῶν αὐτοῦ μαθητῶν τὸν Θεόφρ. That he was actually so is evident from all that we know of Theophrastus and his position in the Peripatetic School.

[2] He is constantly called Ἐρέσιος. According to PLUT. *Adv. Col.* 33, 3, p. 1126; *N. p. suav. vivi sec. Epic.* 15, 6, p. 1097, he had delivered his native city twice from Tyrants. No particulars, however, are given, and we are not in a position to test the historical character of the statement.

[3] According to DIOG. v. 36 he first attended at Eresos the instructions of a citizen called Alcippus, εἶτ' ἀκούσας Πλάτωνος [this is chronologically possible] μετέστη πρὸς Ἀριστοτέλην—by which it can only be meant that Theophrastus, like Aristotle himself, remained a member of the Academy until the death of Plato, and after that event continued with Aristotle. From several indications, moreover, we gather that Theophrastus was with Aristotle in Macedonia; for unreliable as is AELIAN's statement (*V. H.* iv. 19) that he was highly esteemed by Philip, it makes it all the more certain that he was a friend of Callisthenes, whom he could only have come to know at that time, and that he lamented his tragic end in a work entitled Καλλισθένης ἢ περὶ πένθους (CIC. *Tusc.* iii. 10, 21, v. 9, 25; DIOG. v. 44; ALEX. *De An.* 162, b *fin.*). The possession of a property at Stagira (DIOG. v. 52) and the repeated mention of this town, and of the museum in it, also go to prove that he was there at the same time as Aristotle. The expression which the latter is said to have used with regard to him and Callisthenes (DIOG. 39) is all the

point of age he was not far removed.[1] Before his death Aristotle committed to his charge not only his private affairs[2] but also his School, which he had probably already handed over to him on his departure from Athens.[3] Under Theophrastus the school grew even

more suspicious as it is also attributed to Plato and Isocrates (see *Ph. d. Gr.* i. 842, 1). Similarly the assertion that Theophrastus was originally called Tyrtamus, and received the name Θεόφραστος from Aristotle on account of his graceful style (STRABO, xiii. 2, 4, p. 618; CIC. *Orat.* 19, 62; QUINTIL. *Inst.* x. 1, 83; PLIN. *H. Nat. praef.* 29; DIOG. 38; SUID. Θεόφρ.; AMMON. *De Interpr.* 17, b, and: OLYMPIOD. *V. Plat.* p. 1) is justly called in question by BRANDIS, iii. 251, and MEYER (*Gesch. der Botanik*, i. 147).

[1] The year of Theophrastus's birth and death can only be determined approximately. According to APOLLODORUS (*Diog.* 58) he died Ol. 123 (288–284 B.C.), but the year is not given; that it was the third year of the Olympiad (BRANDIS, iii. 254; NAUWERCK, *De Strat.* 7), and that he was himself the head of the school for thirty-five (BRANDIS *ibid.*) or thirty-six (RITTER iii. 408) years is mere conjecture. DIOG. 40 gives his age as eighty-five, and this is far more probable than the statement of the spurious letter prefixed to Theophrastus's *Characters*, that he composed this treatise at the age of ninety-nine, and of HIERONYMUS (*Ep.* 34 *Ad Nepotian.* iv. b, 258 Mart., where our text has 'Themistoclem' instead of 'Theophrastum'), that he was 107, for Diog. probably here follows Apollodorus; these statements, moreover, make him older than Aristotle, and much too old to be destined by the latter (see following note) as the husband of his daughter, who was not yet grown up. According to Diog., Theophrastus's birth falls between 373 and 368 B.C.; he was therefore from eleven to sixteen years younger than Aristotle.

[2] He begs Theophrastus, along with some others, until Nicanor can interest himself in the matter, ἐπιμελεῖσθαι . . . ἐὰν βούληται καὶ ἐνδέχηται αὐτῷ, τῶν τε παιδίων καὶ Ἑρπυλλίδος καὶ τῶν καταλελειμμένων, and in case Nicanor, for whose wife he had destined his daughter Pythias, should die before the marriage took place, he enjoins upon him the duty of marrying her in his stead and becoming the guardian of her younger brother. (See his Will, DIOG. v. 12, 13.) Theophrastus actually undertook the education of the latter, as he also afterwards did that of the sons of Pythias (see p. 20, n. 3, vol. i.; DIOG. 53; SEXT. *Math.* i. 258), and his affection for him gave occasion to one Aristippus, περὶ παλαιᾶς τρυφῆς, to accuse him of erotic relations with him (DIOG. 39). In his Will (*ibid.* 51 sq.) Theophrastus leaves directions for the execution of pictures of Aristotle and Nicomachus.

[3] See p. 37, and p. 39, n. 1.

more flourishing,[1] and when, after holding the presidency for more than thirty-four years,[2] he died, honoured in spite of many hostile attacks[3] both at home and abroad,[4] he left it as an endowment the garden and the hall in which henceforth it had its settled abode.[5] Nor

[1] DIOG. 37: ἀπήντων τε εἰς τὴν διατριβὴν αὐτοῦ μαθηταὶ πρὸς δισχιλίους. If by this is meant that he had this number during his whole life we must suppose that the inner circle of his students is referred to; if he had them all at one time it can only have been at single lectures, perhaps on rhetoric or some other popular subject. Zeno's expression (PLUT. *Prof. in Virt.* c. 6 *fin.* p. 78; *De se ipso laud.* c. 17, p. 545) ὁ ἐκείνου χορὸς μείζων, ὁ ἐμὸς δὲ συμφωνότερος refers to the number of his students.

[2] See p. 349, n. 1, *supra*.

[3] See following note. Of the Epicureans besides Epicurus himself (PLUT. *adv. Col.* 7, 2, p. 1110) the hetaera Leontium also wrote against him; CIC. *N. D.* i. 33, 93.

[4] Of foreign princes Cassander and Ptolemy, according to DIOG. 37, gave him proofs of their esteem; to the former of whom was dedicated a treatise π. βασιλείας, the genuineness of which, however, was doubted by some (DIOG. 47; DIONYS. *Antiquitt.* v. 73; ATHEN. iv. 144, e). The esteem in which he was held at Athens was shown at his burial (DIOG. 41), as also previously in the matter of the accusation of impiety brought against him by Agnonides, which failed completely (perhaps AELIAN, *V. H.* viii. 12, relates to this), and in the matter of the law of Sophocles (cf. also ATHEN. xiii. 610, e; KRISCHE, *Forsch.* 338), which made the consent of the Senate and people necessary for the opening of a philosophical school. When, in consequence of this law (prob. *ann.* 306–5), all the philosophers, and among them Theophrastus, left Athens it is said to have been chiefly regard for him which caused its repeal and the punishment of its author; DIOG. 37 sq., cf. ZUMPT, *Ueber den Bestand der philos. Schulen in Athen, Abh. der Berl. Akad. hist.-phil. Kl.* 1842, 41 sq.

[5] DIOG. 39: λέγεται δ' αὐτὸν καὶ ἴδιον κῆπον σχεῖν μετὰ τὴν Ἀριστοτέλους τελευτὴν, Δημητρίου τοῦ Φαληρέως . . . τοῦτο συμπράξαντος. Theophrastus's will, *ibid.* 52: τὸν δὲ κῆπον καὶ τὸν περίπατον καὶ τὰς οἰκίας τὰς πρὸς τῷ κήπῳ πάσας δίδωμι τῶν γεγραμμένων φίλων ἀεὶ τοῖς βουλομένοις συσχολάζειν καὶ συμφιλοσοφεῖν ἐν αὐταῖς (ἐπειδήπερ οὐ δυνατὸν πᾶσιν ἀνθρώποις ἀεὶ ἐπιδημεῖν) μήτ' ἐξαλλοτριοῦσι μήτ' ἐξιδιαζομένου μηδενὸς, ἀλλ' ὡς ἂν ἱερὸν κοινῇ κεκτημένοις . . . ἔστωσαν δὲ οἱ κοινωνοῦντες Ἵππαρχος &c. It is probable that the sanctuary of the Muses, described § 51 sq., with its two chambers, in one of which were hung the πίνακες ἐν αἷς αἱ τῆς γῆς περίοδοί εἰσιν, belonged to the buildings here mentioned. From the words, § 39, μετὰ τὴν Ἀρι-

were his services to the Peripatetic doctrine less conspicuous. In creative power of intellect he is not indeed to be compared with Aristotle. But he was in an especial degree fitted for the work of strengthening, extending and completing the system which the latter had left behind him. The interest in science by which he was governed even to excess, and which led him to subordinate all other concerns to its peaceful pursuit and even to forego the pleasures of the family life;[1] the insatiable thirst for knowledge which drew from him even when dying complaints of the shortness of human life;[2] the industry which scarcely relaxed in extreme old age;[3] the penetration, conspicuous even in what has come

στοτέλους τελευτὴν ZUMPT infers, *ibid.* 31 sq., that Aristotle had previously possessed this garden, and that as it was to be sold after his death Demetrius managed that it should be transferred to Theophrastus. BRANDIS (iii. 253) considers this inference a rash one, but also supposes that Aristotle taught in a house and garden of his own in the Lyceum. We have no information, however, on this point; yet the opposite cannot, after what has been said p. 38, vol. i., be inferred with any certainty from the fact that Aristotle's will makes no mention of any such property. Even the words upon which ZUMPT relies, if they have any special force, may with equal reason be held to imply that the Peripatetic school did not become the owner of property till after Aristotle's death. It is most probable, therefore, that Aristotle did not give his instructions in a garden of his own. According to ATHEN. v. 186, a (i. 402, Dind.), Theophrastus left behind him also means to provide common meals for members of the school.

[1] That Theophrastus was still unmarried at the time of Aristotle's death is obvious from the will of the latter (see p. 349, n. 2, *supra*); that he remained so is obvious from his [illegible]n and, from the total absence of any statement to the contrary. The reason why he disdained the married state he himself gives us in the fragment in HIERON. *Adv. Jovin.* i. 47, iv. b, 189, Mart., hereafter to be discussed, where he dissuades the philosopher from it, chiefly on the ground that it brings with it disturbances incompatible with the scientific life.

[2] CIC. *Tusc.* iii. 28, 69; DIOG. v. 41; HIERON. *Epist.* 24 *Ad Nepotian.* iv. b, 258 Mart.

[3] DIOG. 40: ἐτελεύτα δὴ γηραιὸς . . . ἐπειδήπερ ὀλίγον ἀνῆκε τῶν πόνων.

down to us of his writings; that grace of language and delivery, the fame of which survived him,[1] as well as the independence of his outward circumstances[2] and the possession of all the requisite means for the prosecution of his learned labours[3]—all these must have contributed in a high degree to promote his success as a scientific investigator and teacher. The numerous writings which he left behind him as a monument to his diligence extend to every part of the field of knowledge that was then open.[4] To us only a small

[1] Cf. besides the passages quoted *supra*, p. 348, n. 3 *fin.*: CIC. *Brut.* 31, 121: *quis . . . Theophrasto dulcior? Tusc.* v. 9, 24: *hic autem elegantissimus omnium philosophorum et eruditissimus.* In his case, as in Aristotle's, this merit belongs chiefly to his popular writings, and especially to the dialogues, which, like Aristotle's, are described as exoteric (see p. 111, n. 2, 3, vol. i.). PROKL. *In Parm.* i. *fin.* p. 54 Cous. complains that the introductions in them do not hang together with the main content. According to HERMIPPUS (ATHEN. i. 21, a) his personal adornment was excessive and his delivery too theatrical. Frequent mention is made of his witticisms, *e.g.* PLUT. *Qu. Conv.* ii. 1, 9, 1, v. 5, 2, 7 (vii. 10, 2, 15); *Lycurg.* c. 10 (*Cupid. Div.* c. 8, p. 527; PORPH. *De Abstin.* iv. 4, p. 304).

[2] We may infer Theophrastus's opulence from his will (DIOG. v. 51 sqq.). which specifies considerable property in land, slaves, and money, although the total amount of the last (§ 59 sq.) is not stated.

[3] Mention is made of his library, of which Aristotle's constituted the ground floor, in STRABO, xiii. 1, 54, p. 608, and in his will (DIOG. 52; ATHEN. i. 3, a, where τούτων shows that Theophrastus's name has fallen out after that of Aristotle). O. KIRCHNER, *Die Botan. Schr. d. Theophr.* (*Jahrb. f. Philol. Supplementbd.* vii. 1874, p. 462 sqq.), makes it appear probable from Theophrastus's botanical works that besides many parts of Greece and Macedonia he had visited Crete, Lower Egypt, perhaps also Southern Thrace, and the coast of Asia Minor, and thus added the knowledge of foreign countries to his other means of research.

[4] Hermippus and Andronicus had made lists of his works (see p. 49, n. 4, vol. i.; PLUT. *Sulla*, 26; cf. PORPHYR. *Vit. Plotini*, 24); DIOG. v. 42–50 has presented to us one (upon which cf. the minute investigations of USENER, *Analecta Theophrastea*, Leipsic, 1858, 1–24; and on the treatises on logic which it contains, PRANTL, *Gesch. der Log.* i.

portion of these multitudinous works remains: the two on botany,[1] a few shorter treatises on natural

350). This list not only omits some known writings (USENER, 21 sq.) but follows a strange order. After two alphabetical lists, of which the second is clearly supplementary to the first, but both of which probably give only those of the writings of Theophrastus which were to be found in the Alexandrine or some other great library, follow two more supplements; the first of these is not arranged according to any definite principle, the second, if we exclude some insertions, is again alphabetical. It is not improbable that this list, as Usener thinks, is Hermippus's, come to us (cf. ROSE, *Arist. Libr. Auct.* 43 sq.) through Favorinus, from whom DIOG. immediately before (v. 41) quotes Hermippus, and whose name is also introduced before the list of ARIST.'s writings (v. 21) and before PLATO's will (iii. 40). How far the writings here enumerated are genuine we have scarcely any means of judging; USENER, p. 17, makes it probable that a few of them (the *History of Geometry, Astronomy, and Arithmetic*, perhaps also the *History of Theological Opinions*, v. 48, 50) belonged to Eudemus.

[1] Π. φυτῶν ἱστορίας nine books; π. φυτῶν αἰτιῶν six books. It has already been shown (*supra*, vol. i. p. 93, n. 2), that these works are by Theophrastus and not by Aristotle; in determining the date of their composition we have further to take into consideration the allusions, *Hist. Pl.* v. 2, 4, to the destruction of Megara by Demetrius Poliorcetes (Ol. 118, 2 = 306 B.C.), vi. 3, 3, to the archonship of Simonides (Ol. 117, 2), iv. 3, 2, to the expedition of Ophellas (Ol 118, 1), ix. 4, 8, to King Antigonus. *Hist. Pl.* v. 8, 1, also refers to the period subsequent to the conquest of Cyprus by Demetrius Poliorcetes (DIODORUS, xx. 47 sqq. 73 sqq.), and was therefore written after Ol. 118, 2. (Cf. BRANDIS, iii. 322 sq.) SIMPLICIUS's statement, *Phys.* 1, a, that Aristotle treated of plants partly historically and partly ætiologically can hardly refer to these two works, and is the less important since SIMPL. (as already remarked, vol. i. p. 93, n. 2), had no personal acquaintance with Aristotle's treatise upon plants. In the two works of Theophrastus, besides many corruptions in the text, there are a number of lacunæ. In the π. φυτῶν αἰτιῶν the last sections (perhaps two books, since DIOG. 46 speaks of the treatise as consisting of eight) are unmistakably lost (cf. SCHNEIDER, *Theophr. Opp.* v. 232 sqq.). The ascription by DIOG. 46 of ten books to the ἱστορία is perhaps to be explained by the supposition that one of those which we have (SCHNEIDER, *ibid.* thinks the fourth, which certainly has a break, c. 12 *fin.*) was divided in some manuscripts; contrariwise the fact that *Hist.* viii. 4, 5 and ix. 18, 2 are quoted by APOLLON. *Mirab.* 33, 41, as respectively from ζ' and η' περὶ φυτῶν points to the loss of one of the earlier

science,[1] fragments of a work on metaphysics[2] and of the important history of physics[3] (which seems to have been the treasure-house from which later tradition chiefly

books or its combination with another. On the other hand, the view that the ninth book of the botanical treatise did not originally belong to it (WIMMER, *Theophr. Hist. Plant.* 1842, p. ix.) is with good reason rejected by KIRCHNER, *De Theophr. Libr. Phytol.* 34 sqq.: it is known as part of the treatise not only to DIOG. (*ibid.*) but to APOLLON., who in c. 29 quotes ix. 13, 3; 20, 4, c. 31, ix. 17, 4, c. 41, ix. 18, 2, c. 48, ix. 11, 11, c. 50, ix. 17, 3 (here expressly as the ἐσχάτη τῆς πραγματείας); it is unmistakably referred to in the sixth book *De Caus. Plant.*, even quoted ii. 6, 4 (cf. *Hist.* ix. 18, 10), its contents are forecast i. 12, 1, and in 1, 4; 2, 2; 8, 8; 19, 1, it refers back itself to the earlier books. Similarly MEYER (*Gesch. d. Botanik*, i. 176 sq.) and BRANDIS, iii. 32 sq., are right in again setting aside the view that the sixth book *De Causis Pl.* could be a separate work or wholly spurious. Even the remarks upon the number seven, c. 4, 1, 2, which Brandis finds strange, contain nothing surprising; Aristotle had already counted seven primary colours and seven tastes corresponding to the seven notes (see *supra*, vol. i. p. 518, n. 3), and a statement similar to that which is here made about the number seven, is to be found in THEOPHR. *De Ventis* (Fr. 5), 49, about the number three.

[1] See SCHNEIDER, *Opp.* i 647 sqq. WIMMER, vol. i i. of his edition (1862).

[2] Metaphysical aporiæ, with regard to which we do not know whether they belonged to a more comprehensive work or merely to an introductory treatise. According to the scholium at the end, the work of which they were a part was not included either by Hermippus or by Andronicus in their lists but quoted by Nicolaus (of Damascus). On the manifold corruptions of its text, see besides the edd. of BRANDIS (*Arist. et Theophr. Metaph.* 308 sqq.) and WIMMER (*Fragm.* No 12), USENER in the *Rhein. Mus.* xvi 259 sqq.

[3] This work is called sometimes φυσικὴ ἱστορία (ALEX. apud SIMPL. *Phys.* 25, a, o.), sometimes φυσικὰ (DIOG. ix. 22; SIMPL. *De Cœlo*, *Schol. in Ar.* 510, a, 42; STOB. *Ekl.* i. 522), elsewhere φυσικαὶ δόξαι (DIOG. v. 48), περὶ φυσικῶν (*ibid.* 46), π. τῶν φυσικῶν (ALEX. *Metaph.* 24, 4; *Bon.* 536, a, 8 bk.), π. τῶν φυσικῶν δοξῶν (TAURUS apud PHILOP. *Adv. Procl.* vi. 8, 27). DIOG. v. 46, assigns to it eighteen books, v. 48, 16. USENER, *Anal. Theophr.* 30 sqq., has collated the fragments of it; but the treatise, περὶ αἰσθήσεως καὶ αἰσθητῶν (WIMMER, fr. 1), which Philippson deals with, ὕλη ἀνθρωπίνη (1831), 81 sqq. (cf. USENER, *ibid.* 27), seems also to have belonged to it. On the other hand, the supposition that the extract *ap.* PHILO. *Ætern. m.* c. 23–27, p. 510 sqq. Mang., is taken from it (USENER, p. 38; BERNAYS, *Theophrast. üb. Frömmigk.* 46) does

drew its accounts of the earlier physicists[1]) besides a number of other fragments.[2] The 'Characters' are only an incomplete extract, with several foreign additions, probably from Theophrastus's treatise upon Ethics.[3]

The chief feature of the scientific labours of Theophrastus, so far as these are known to us, is the endeavour to complete the compass and define more sharply the contents of Aristotelian doctrine. The fundamental principles of the system suffer no change and are not unfrequently stated in the very words of Aristotle.[4] Theophrastus, however, exerts himself to develop his doctrine as completely as possible on every side, to increase the number of scientific and ethical

not commend itself; for a dogmatic and polemical discussion with Zeno the Stoic (as ZELLER has shown this to be in HERMES, xi. 422 sqq.) can have formed no part of an historical work, nor does it at all resemble the treatise π. αἰσθήσεως, either in tone or treatment. In the first book of the φυσικὴ ἱστορία THEOPHR. (as is shown in the *Abhandl. d. Berl. Akad.* 1877, p. 150 sqq.) had given a review of the principles of earlier philosophers, in which he connected his work with the first book of ARIST.'s *Metaphysics*.

[1] Fuller proof of this fact, which he was the first to perceive, will be found in H. DIELS' recent work, *Doxographi Græci*, as also *ibid.* p. 473 sq. the fragments of the φυσικαὶ δόξαι.

[2] To those collected in Wimmer must be added chiefly the remainder of the treatise περὶ εὐσεβείας, which BERNAYS (*Theophrast. Schrift über Frömmigkeit*) cleverly recovered from PORPHYRY'S *De Abstinentia*. The treatise on indivisible lines was also attributed to him, perhaps rightly. By some even ARIST.'s *Politics* (see vol. ii. *supra*, p. 204, n. 2) was referred to Theophrastus. More recent writers have attributed to him the treatises upon colour (SCHNEIDER, iv. 864, who, however, considers them only a portion of a larger work; on the other side see PRANTL, *Arist. v. d. Farben*, 84 sq.), upon Melissus, Xenophanes &c. (on this see *Ph. d. Gr.* i. 476 sqq.).

[3] On this and on the ethical writings of Theophrastus see *infra*.

[4] As among others, KIRCHNER, *Jahrb. f. Philol. Supplementb.* vii. 532 sqq. has shown in respect of the botanical works.

observations, to apply the Aristotelian rules to particular cases, especially to those which had been overlooked by Aristotle, to correct the vagueness of particular conceptions and to set them in a clear light.[1] His starting-point is experience. As Aristotle in all his investigations had taken his stand upon the firm ground of fact and had established even the most universal conceptions upon the basis of a comprehensive induction, Theophrastus also is convinced that we must begin with observation in order to attain to true conceptions. Theories must coincide with the data of experience, and they will do so if we start with the consideration of the individual;[2] perception furnishes the material which thought may either straightway apply to its own ends or by solving the difficulties which experience brings to light may utilise for future discoveries.[3] Natural science,

[1] Cf. BOETH. *De Interpr.* p. 292: *Theophrastus, ut in aliis solet, quum de similibus rebus tractat, quæ scilicet ab Aristotele ante tractatæ sunt, in libro quoque de affirmatione et negatione iisdem aliquibus verbis utitur, quibus in hoc libro Aristoteles usus est . . . in omnibus enim, de quibus ipse disputat post magistrum, leviter ea tangit, quæ ab Aristotele dicta ante cognovit, alias vero diligentius res non ab Aristotele tractatas exsequitur.*

[2] *Caus. Pl.* i. 1, 1: εὐθὺ γὰρ χρὴ συμφωνεῖσθαι τοὺς λόγους τοῖς εὑρημένοις. 17, 6: ἐκ δὲ τῶν καθέκαστα θεωροῦσι σύμφωνος ὁ λόγος τῶν γιγνομένων. ii. 3, 5: περὶ δὲ τῶν ἐν τοῖς καθέκαστα μᾶλλον εὐποροῦμεν· ἡ γὰρ αἴσθησις δίδωσιν ἀρχάς κ. τ. λ.

[3] Fr. 12 (*Metaph.*), 19: τὸ δὲ ὂν ὅτι πολλαχῶς φανερόν. ἡ γὰρ αἴσθησις καὶ τὰς διαφορὰς θεωρεῖ καὶ τὰς αἰτίας ζητεῖ. τάχα δ' ἀληθέστερον εἰπεῖν ὡς ὑποβάλλει τῇ διανοίᾳ, τὰ μὲν ἁπλῶς ζητοῦσα τὰ δ' ἀπορίαν ἐργαζομένη, δι' ἧς κἂν μὴ δύνηται προβαίνειν, ὅμως ἐμφαίνεταί τι φῶς ἐν τῷ μὴ φωτὶ ζητούντων ἐπὶ πλέον. *Ibid.* 25: μέχρι μὲν οὖν τινὸς δυνάμεθα δι' αἰτίου θεωρεῖν, ἀρχὰς ἀπὸ τῶν αἰσθήσεων λαμβάνοντες. CLEMENS, *Strom.* ii. 362, D; Θεόφρ. δὲ τὴν αἴσθησιν ἀρχὴν εἶναι πίστεώς φησιν· ἀπὸ γὰρ ταύτης αἱ ἀρχαὶ πρὸς τὸν λόγον τὸν ἐν ἡμῖν καὶ τὴν διάνοιαν ἐκτείνονται. SEXT. *Math.* vii. 217: Aristotle and Theophrastus have two criteria, αἴσθησιν μὲν τῶν αἰσθητῶν, νόησιν δὲ τῶν νοητῶν· κοινὸν δὲ ἀμφοτέρων, ὡς ἔλεγεν ὁ Θεόφρ., τὸ ἐναργές.

moreover, must rest upon perception because it has to do wholly with corporeal substance.[1] Theophrastus accordingly keeps this principle steadily in view. Where universal laws fail to explain particular facts, he does not hesitate to refer us back to experience;[2] where no complete certainty is possible he will content himself, like Plato and Aristotle, with mere probability;[3] where more exact proofs fail, he, like his master, brings analogy to his aid,[4] but he warns us at the same time not to carry analogy too far or to mistake the peculiar characteristics of phenomena,[5] just as Aristotle had laid down as a fundamental axiom that everything must be explained upon principles peculiar to itself.[6] We cannot say, in truth, that Theophrastus has entirely renounced the comprehensive and universal points of view; but his own inclinations and scientific researches

[1] Fr. 18: ἐπεὶ δὲ οὐκ ἄνευ μὲν κινήσεως οὐδὲ περὶ ἑνὸς λεκτέον, πάντα γὰρ ἐν κινήσει τὰ τῆς φύσεως, ἄνευ δὲ ἀλλοιωτικῆς καὶ παθητικῆς οὐχ ὑπὲρ τῶν περὶ τὸ μέσον, εἰς ταῦτά τε καὶ περὶ τούτων λέγοντας οὐχ οἷόν τε καταλιπεῖν τὴν αἴσθησιν, ἀλλ' ἀπὸ ταύτης ἀρχομένους πειρᾶσθαι χρὴ θεωρεῖν, ἢ τὰ φαινόμενα λαμβάνοντας καθ' ἑαυτά, ἢ ἀπὸ τούτων, εἴ τινες ἄρα κυριώτεραι καὶ πρότεραι τούτων ἀρχαί.

[2] *Caus. Pl.* ii. 4, 8: ἀλλ' ἐν τοῖς καθέκαστα τὸ ἀκριβὲς μᾶλλον ἴσως αἰσθητικῆς δεῖται συνέσεως, λόγῳ δὲ οὐκ εὐμαρὲς ἀφορίσαι. Cf. *Hist.* i. 3, 5. The differences between botanical species are somewhat vague; διὰ δὴ ταῦτα ὥσπερ λέγομεν οὐκ ἀκριβολογητέον τῷ ὅρῳ ἀλλὰ τῷ τύπῳ ληπτέον τοὺς ἀφορισμούς.

[3] SIMPL. *Phys.* 5, a, m: natural science cannot arrive at the complete certainty of knowledge; ἀλλ' οὐκ ἀτιμαστέον διὰ τοῦτο φυσιολογίαν· ἀλλ' ἀρκεῖσθαι χρὴ τῷ κατὰ τὴν ἡμετέραν χρῆσιν καὶ δύναμιν, ὡς καὶ Θεοφράστῳ δοκεῖ. Cf. also *supra*, vol. i. p. 167 sq.

[4] See *Caus. Pl.* iv. 4, 9–11; *Hist.* i. 1, 10 sq.

[5] *Hist.* i. 1, 4: we must beware of comparing plants with animals in every respect. ὥστε ταῦτα μὲν οὕτως ὑποληπτέον οὐ μόνον εἰς τὰ νῦν ἀλλὰ καὶ τῶν μελλόντων χάριν· ὅσα γὰρ μὴ οἷόν τε ἀφομοιοῦν περίεργον τὸ γλίχεσθαι πάντως, ἵνα μὴ καὶ τὴν οἰκείαν ἀποβάλλωμεν θεωρίαν.

[6] See *supra*, vol. i. p. 249, n. 1, 2, 3.

have an unmistakable bias in the direction of particulars rather than fundamental principles.

This is the method which Theophrastus and, following him, Eudemus have adopted in their treatment of logic. While holding fast by Aristotelian principles, they have permitted themselves many divergences in detail.[1] In discussing the Conception, for instance, Theophrastus refused to admit that all contraries belong to the same genus.[2] The doctrine of the Judgment, again, to which both Eudemus and he devoted separate treatises,[3] received at their hands various additions, which, however, so far as we know, were of no great importance.[4] They introduced a slight change in the

[1] Cf. PRANTL, *Gesch. der Log.* i. 346 sqq., who, however, seems to undervalue the contributions of Theophrastus and Eudemus to Logic.

[2] Cf. fr. 15 (SIMPL. *Categ.* 105, α′; *Schol. in Ar.* 89, a, 15). ALEX. on *Metaph.* 1018, a, 25; also *supra*, vol. i. p. 224, n. 3.

[3] Theophrastus in the treatises περὶ καταφάσεως καὶ ἀποφάσεως (DIOG. 44, 46; ALEX. in *Anal. Pr.* 5, a, m, 21, b, m, 124, a, 128; *Metaph.* 653, b, 15; GALEN, *Libr. Propr.* 11, xix. 42, K; BOETH. *Ad Arist. de Interpr.* 284, 286, 291, 327, (Bâle); *Schol. in Ar.* 97, a, 38, 99, b, 36; PRANTL, 350, 4), π. λέξεως (DIOG. 47; DIONYS. *Hal. Comp. Verb.* p. 212, Schäf.), π. τῶν τοῦ λόγου στοιχείων (as PRANTL, 353, 23, in SIMPL. *Categ.* 3, β, Bâle, rightly emends). As to Eudemus, π. λέξεως, see ALEX. *Anal. Pr.* 6, b, in *Metaph.* 566, b, 15, Br.; *Anon. Schol. in Arist.* 146, a, 24; GALEN, *ibid.* On their other logical treatises cf. *supra*, vol. i. p. 64, n. 1.. PRANTL, p. 350, and *Eth. Eud.* i. 6 *fin.* ii. 6, 1222, b, 37, c. 10, 1227, a, 10.

[4] Theophrastus distinguishes in his treatise π. καταφάσεως between different meanings of πρότασις (ALEX. *Anal. Pr.* 5, a, m; *ibid.* 124, a; *Top.* 83, a, 189, a. Similar distinctions are quoted from the same treatise and that π. τοῦ Πολλαχῶς (which was probably on the model of Aristotle's—see *sup.* vol. i. p. 76 sq.); Eudemus noticed the predicative force of the verb 'to be' in existential propositions (*Anon. Schol. in Arist.* 146, a, 24, and for another remark of Eudemus on the verb 'to be' see ALEX. *Anal. Pr.* 6, b, m). Theophrastus called particular propositions indeterminate (see *sup.* vol. i. p. 233, n. 1, and BOETH. *De Interpr.* 340, m; *Schol.* in WAITZ, *Ar. Org.* i. 40; PRANTL, 356, 28), and Aristotle's

theory of the Conversion of Propositions, with which Aristotle's treatment of the Syllogism begins, by substituting a direct, in place of Aristotle's indirect, proof of the simple converse of universal negative propositions.[1] As they further approached the question of the Modality of Judgments from a different side,[2] they con-

indeterminate *ἐκ μεταθέσεως* (see *supra*, vol. i. p. 232, n. 2; *Stephanus* and *Cod. Laur.* in WAITZ, *ibid.* 41 sq; and on his reasons for doing so, PRANTL, 357). He distinguished in particular negative propositions between 'not all' and 'some not' (*Schol. in Ar.* 145, a, 30). In regard to the modality of judgments he made a distinction between simple necessity and necessity resulting from particular circumstances (ALEX. *An. P.* 12, b, u.). He elucidated contradictory opposition, which he declared in general to be indemonstrable (ALEX. on *Metaph.* 1006, a, 11, p. 653, b, 15, Br.), with the remark that contradictory propositions are absolutely exclusive of one another only when their meaning is fixed and definite (*Schol. Ambros.* in WAITZ, *ibid.* 40), a caution against sophistical objections to which PRANTL, p. 356, unnecessarily takes exception.

[1] In ARIST. *Anal. Pr.* i. 2, 25, a, 15, it stands: *εἰ μηδενὶ τῶν* B *τὸ* A *ὑπάρχει, οὐδὲ τῶν* A *οὐδενὶ ὑπάρξει τὸ* B. *εἰ γάρ τινι, οἷον τῷ* Γ, *οὐκ ἀληθὲς ἔσται τὸ μηδενὶ τῶν* B *τὸ* A *ὑπάρχειν· τὸ γὰρ* Γ *τῶν* B *τί ἐστιν.* Theophrastus and Eudemus put it more simply: 'if no B is A, A is separate from all B, B is therefore separate from all A, and therefore no A is B' (ALEX. *An. Pri.* 11, a, m. 12, a.; PHILOP. *An. Pr.* xiii. b; *Schol. in Ar.* 148, b, 46; cf. the scholium which PRANTL, 364, 45, gives from Minas). PRANTL criticises this 'convenient' proof: ZELLER, on the contrary, considers it the right one, and says that he cannot find for that of Aristotle 'reasons founded on the very nature of genus and species' as Prantl professes to do.

[2] Aristotle had taken the conceptions of possibility and necessity, as has been remarked (see *sup.* vol. i. p. 234 sq.) to express a quality of things, not of our knowledge of things. By the possible he does not understand that which we have no reason to deny, nor by the necessary that which we are forced to accept, but by the former that which by nature may equally be or not be, by the latter that which by its nature must be. Theophrastus and Eudemus, indeed, have left us no general statement on this subject (even in the passage quoted by PRANTL, 362, 41, from ALEX. *Anal. Pr.* 51, a, only the words '*τρίτον τὸ ὑπάρχον* [sc. *ἀναγκαῖόν ἐστιν*]· *ὅτε γὰρ ὑπάρχει τότε οὐχ οἷόν τε μὴ ὑπάρχειν,*' seem to belong to THEO.'s *Prior Analytics*, while the rest belong to Alexander himself); but it is obvious from their departures from Aristotle, which we are about to mention, that they take possibility

sequently denied what Aristotle had affirmed, that every assertion of possibility implies the opposite possibility, and they maintained, against his denial, the convertibility of universal negative judgments of possibility;[1] while with regard to conclusions whose premises are of different modality, they held firmly by the principle that the conclusion follows the weaker premise.[2] We further know that Theophrastus added to the four Modes which Aristotle had assigned to the first Figure five new ones, obtained by the conversion of the conclusions or the premises, a development in which we certainly fail to see any advantage,[3] and it is possible that he treated the two other Figures in the same way,[4] asserting at the same time, in opposition to Aristotle, that these also give perfect conclusions.[5] He also

and necessity only in the formal logical sense.

[1] See *sup.* vol. i. p. 234 sq. and ALEX. *Anal. Pr.* 14, a, m.; *Anon. Schol. in Ar.* 150, a, 8. The proofs of the two Peripatetics are given in a scholium which PRANTL, 364, 45, prints from MINAS'S notes on Galen's Εἰσαγωγὴ διαλεκτική, p. 100. The same writer's quotation, 362, 41, from BOETH. *Interpr.* 428, upon Theophrastus relates merely to an unimportant explanation. Similarly a modification of an Aristotelian argument mentioned by ALEX. *Anal. Pr.* 42, b, n. is, as PRANTL, p. 370, also remarks, insignificant.

[2] From an apodeictic and a categorical premise follows, they said, a categorical; from a categorical and hypothetical, a hypothetical; from an apodeictic and hypothetical also a hypothetical conclusion (see *sup.* vol. i. p. 234 sq. and on the third case, PHILOP. *Anal. Pr.* li. a; *Schol. in Arist.* 166, a, 12; on an argument of Theophrastus relating to this, ALEX. *Anal. Pr.* 82, b.).

[3] For details see ALEX. *Anal. Pr.* 22, b. 34, b.—35, a; *Anon. Schol. in Ar.* 188, a, 4, and PRANTL'S citations, 365, 46, from APUL. *De Interpr.* (*Dogm. Plat.* iii.), 273 sq. 280, Oud.; BOETH. *Syll. Cat.* 594 sq.; PHILOP. *An. Pr.* xxi. b (*Schol.* 152, b, 15); cf. also UEBERWEG, *Logik*, 282 sqq.

[4] As PRANTL, 368 sq., conjectures from ALEX. *Anal. Pr.* 35, a. Cf. following note.

[5] *Schol.* in WAITZ, *Arist. Org.* i. 45: ὁ δὲ Βοηθὸς . . . ἐναντίως τῷ Ἀριστοτέλει περὶ τούτου ἐδόξασε . . . καὶ ἀπέδειξεν, ὅτι πάντες οἱ ἐν δευτέρῳ καὶ τρίτῳ σχήματι τέλειοί εἰσιν (which Aristotle denies, see *supra*, vol. i. p. 240, n. 4). . . . φαίνεται δὲ καὶ Θεό-

changed the order of several of the Modes.[1] It is more important, however, to note that Theophrastus and Eudemus introduced into logic the theory of Hypothetical and Disjunctive Syllogisms.[2] Both of these they embraced under the name Hypothetical, pointing out that in the Disjunctive also that which is undetermined at first is afterwards determined by the addition of a second clause.[3] They distinguished further two kinds of hypothetical conclusions: those which, consisting of purely hypothetical propositions, only assign the conditions under which something is or is not the case,[4]

φραστος . . . τὴν ἐναντίαν αὐτῷ (Aristotle) περὶ τούτου δόξαν ἔχων.

[1] In the third figure he placed the fourth of Aristotle's modes as simpler before the third, and the sixth before the fifth (*Anon. Schol. in Ar.* 155, b, 8; PHILOP. *ibid.* 34, 156, a, 11), adding a seventh mode which he obtained by dividing the first (APUL. *ibid.* p. 276).

[2] As ALEX. *An. Pr.* 131, b.; PHILOP. *An. Pr.* lx. a; *Schol. in Ar.* 169, b, 25 sqq., expressly state. According to BOETH. *Syll. Hypoth.* 606 (in PRANTL, 379, 59), Eudemus treated this subject more fully than Theophrastus.—Much less important are the citations from Theophrastus's discussions upon syllogisms κατὰ πρόσληψιν given by ALEX. *An. Pr.* 128, a., cf. 88, a, m.; PHILOP. cii. a; *Schol. in Ar.* 189, b, 12; *Anon. ibid.* l. 43, 190, a, 18, cf. PRANTL, 376 sq. These are syllogisms formed of propositions such as those mentioned by Aristotle, *Anal. Pr.* ii. 5, 58, a, 29, b, 10: ᾧ τὸ A μηδενὶ τὸ B παντὶ ὑπάρχει &c. According to ALEX. 128, a, *Schol.* 190, a, 1, however, Theophrastus expressly said that these differ from ordinary categorical propositions only in form; that he nevertheless entered with such minuteness into the discussion of them is only one of the many proofs of the frequently misspent industry with which he traversed every detail.

[3] Cf. PHILOP. *An. Pr.* lx. b; *Schol. in Ar.* 170, a, 30 sqq.; ALEX. *An. Pr.* 109, b, m. That both these writers in the passages named follow the Peripatetic view, as presented by Theophrastus and Eudemus, is obvious from the whole context.

[4] Οἱ τίνος ὄντος ἢ μὴ ὄντος τι οὐκ ἔστιν ἢ τί ἔστι δεικνύντες ('if A is, B is—if B is, C is—if A is, C is'), which are called by Theophrastus διὰ τριῶν ὑποθετικοὶ or δι' ὅλων ὑποθετικοί, as also on account of the similarity of the three propositions κατ' ἀναλογίαν. Theophrastus distinguished three forms of these syllogisms corresponding to the three Aristotelian figures of the categorical

and those which prove that something is or is not.[1] Of the latter a further division is made into those with a hypothetical and those with a disjunctive form,[2] both of which classes, however, agree in this—that what is stated in the major premise as possible is either affirmed or denied in the minor[3] Under the hypothetical are finally classed Comparative,[4] or, as the Peripatetics called them, Qualitative Syllogisms.[5]

syllogism, except that he transposed the order of the second and third. ALEX. *Anal. Pr.* 109, b, m. 110, a.; cf. 88, b.; PHILOP. *ibid.* 170, a, 13 sqq. 179, a, 13 sqq. 189, a, 38.

[1] PHILOP. *Schol. in Ar.* 170, a, 14, 30 sqq. Cf. ALEX. *An. Pr.* 88, b.

[2] PHILOP. *ibid.*: τῶν τὸ εἶναι ἢ μὴ εἶναι κατασκευαζόντων ὑποθετικῶν οἱ μὲν ἀκολουθίαν κατασκευάζουσιν οἱ δὲ διάζευξιν &c. Of the first, two forms are next enumerated: those which by affirming the antecedent affirm the consequent, and those which by denying the consequent deny the antecedent ('If A is, B is. But A is,' &c.; and: 'If A is, B is. But B is not,' &c.). Of the second by a more complicated classification three forms: (1) 'A is not at the same time B and C and D. But it is B. Therefore it is neither C nor D.' (2) 'A is either B or C. But it is B. Therefore it is not C.' (3) 'A is either B or C. But it is not B. Therefore it is C.'

[3] This categorical minor premise following on a conditional or disjunctive major, for which the Stoics afterwards invented the name πρόσληψις, the older Peripatetics (οἱ ἀρχαῖοι, οἱ περὶ Ἀριστοτέλην, cf. PRANTL, 385, 68), following ARIST. (*Anal Pr.* i. 23, 41, a, 30; cf. WAITZ, *in loco*; c. 29, 45, b, 15), called μετάληψις (ALEX. *An. Pr.* 88, a, o. 109, a, m.; PHILOP. *Schol. in Ar.* 169, b, 47, 178, b, 6). If this minor itself receives proof from a categorical syllogism we have the so-called 'mixed syllogism' (ALEX. 87, b, m. sq.). The conditional sentence is called συνημμένον, the antecedent being the ἡγούμενον, the consequent the ἑπόμενον (PHILOP. *Schol. in Ar.* 169, b, 40). Theophrastus, however, remarked the difference here between those conditional sentences in which the condition is introduced problematically by an Εἰ and those in which it is introduced affirmatively by an Ἐπεὶ (SIMPL. *De Cœlo, Schol.* 509, a, 3). He remarked also (ALEX. *Anal. Pr.* 131, b. Ald.; cf. PRANTL, 378, 57) that the μετάληψις again is either a mere hypothesis, or immediately certain, or demonstrated either inductively or deductively.

[4] Οἱ ἀπὸ τοῦ μᾶλλον καὶ τοῦ ὁμοίου καὶ τοῦ ἧττον, *e.g.*: 'if the less precious is a good, so also is the more precious; but wealth, which is less precious than health, is a good, therefore health is so also.' Upon this see ALEX. *An. Pr.* 88, b, m. 109, a.—b.; PHILOP. *An. Pr.* lxxiv. b; PRANTL, 389 sqq.

[5] Κατὰ ποιότητα, probably fol-

No contributions of any importance to the second main division of the *Analytics*—the doctrine of Demonstration—have come down to us from Theophrastus or Eudemus,[1] and we may therefore assume that neither of them differed in any important point from the conclusions of Aristotle on this subject. The same is in substance true of the *Topics*, to which Theophrastus had devoted several treatises.[2] It cannot be proved that he interpreted the subject-matter of the science differently from Aristotle;[3] nor do the isolated utterances on this head which have come to us from Theophrastus and Eudemus go beyond a few formal extensions of Aristotelian doctrines.[4]

lowing ARIST. *An. Pr.* i. 29, 45, b, 16—where, however, this expression is not further explained.

[1] Even PRANTL (p. 392 sq.) has failed to find more than two statements referring to this subject: one in PHILOP. *An. Post.* 17, b.; *Schol. in Ar.* 205, a, 46, distinguishing between ᾗ αὐτὸ and καθ' αὑτό, the other the remark in the anonymous scholium, *ibid.* 240, a, 47, that definition is embraced under demonstration. Equally unimportant are the remarks on καθ' αὑτὸ in ALEX. *Qu. Nat.* i. 26, p. 82, Speng.; on definition in BOETH. *Interpr.* ii. 318, *Schol.* 110, a, 34; on definition and demonstration in *Eustrat. in Libr.* ii.; *Anal. Post.* 11, a, o.; *Schol.* 242, a, 17; cf. *ibid.* 240, a, 47: on the impossibility of proving contradictory propositions in ALEX. on *Metaph.* 1006, a, 14; SYRIAN. in *Metaph.* 872, b, 11 (from the treatise π. καταφάσεως): and the definition of ἀξίωμα in THEMIST. *Anal. Post.* 2, a; *Schol.* 199, b, 46.

[2] Cf. PRANTL, 350 sq. nn. 11–14.

[3] PRANTL, p. 352, infers it from the statement (AMMON. *De Interpr.* 53, a.; *Schol. in Ar.* 108, b, 27; *Anon. ibid.* 94, a, 16) that Theophrastus distinguished a twofold relation, one to the fact in regard to which the question is one of truth or falsehood, the other to the hearers; but the latter is here assigned not to dialectic but to poetry and rhetoric. The citation from the *Analytics* of EUDEMUS in ALEX. *Top.* 70, is also quite Aristotelian.

[4] Theophrastus distinguished between τόπος and παράγγελμα, understanding by the latter a rule which is general and indefinite, by the former one that is definite (ALEX. *Top.* 72; cf. 5, m. 68); of the topical heads, which Aristotle had enumerated (γένος and διαφορὰ, ὅρος, ἴδιον,

The conclusion to which we are so far led, namely, that Theophrastus is by no means inclined blindly to accept the Aristotelian doctrines, becomes still more obvious from the fragment on Metaphysics.[1] The difficulties (ἀπορίαι) suggested in this fragment are directed in great part to Aristotelian assumptions, but we are left wholly in the dark as to whether and in what way the author found the solution of them. Starting from the distinction between First Philosophy and Physics, Theophrastus here asks how their respective objects, the supersensible and the sensible, are related to one another; and after proving that there must be some common bond of union between them and that the supersensible must involve the sensible, he goes on to examine how this is possible.[2] The principles of Mathematics (to which Speusippus had assigned the highest place) are insufficient for the solution of the problem; we require a higher principle, and this we can find only in God.[3] God, therefore, must be the cause of motion in

συμβεβηκὸς, ταὐτὸν) he placed ταὐτὸν, as well as διαφορὰ, under γένος (*ibid.* 25), and all others except συμβεβηκὸς under ὅρος (*ibid.* 31—this is all that we are told, but PRANTL, p. 395, seems to be wrong in his interpretation, cf. BRANDIS, iii. 279). He asserted—to pass over some still more unimportant remarks which are quoted by ALEX. on *Metaph.* 1021, a, 31, and *Top.* 15 (*Schol.* 277, b, 32) —that opposites do not fall under one and the same generic conception (see *sup.* vol. ii. 358, n. 2). Theophrastus's divison of γνῶμαι (GREGOR. CORINTH. *ad Hermog. de Meth.* vii. 1154, w.), Eudemus's division of questions (ALEX. *Top.* 38), and his classification of fallacies παρὰ τὴν λέξιν (that is if GALEN. π. τ. παρὰ τ. λέξ. σοφισμ. 3. xiv. 589 sqq. follows him), will be found in PRANTL, 397 sq.

[1] See *supra*, vol. ii. p. 354, n. 2.

[2] § 1 sqq.; § 2 read ἀρχὴ δὲ, πότερα, &c., 'we begin here with the question whether,' &c.

[3] § 3 sq. according to USENER'S emendation (see p. 354, n. 2, *supra*) of which WIMMER, p. 151, 11, ventured to accept even οἷά τε

the world. He produces that motion, however, not in virtue of any movement in himself, but of a causality more accordant with his nature : he is the object of desire to all the lower creation, and this alone is the cause of the endless movement of the heavens. Satisfactory though this view undoubtedly seemed in many respects,[1] it was not without its difficulties. If there be only one moving principle, why have not all the spheres the same movement? If there are several, how can we explain the harmony of their movements? But a satisfactory reason must also be assigned for the multiplicity of the spheres, and, in fine, everything must be explained as the outcome of design. Why, moreover, should this natural desire of the spheres be directed to motion rather than to rest? And does not desire presuppose a soul, and therefore motion?[2] Why do not things under the moon as well

for ὥστε; § 4 we might propose to read: ἐν ὀλίγοις εἶναι καὶ π ρ ώ τ ο ι ς, εἰ μὴ ἄρα καὶ ἐν τῷ πρώτῳ.

[1] § 6: μέχρι μὲν δὴ τούτων οἷον ἄρτιος ὁ λόγος, ἀρχήν τε ποιῶν μίαν πάντων, καὶ τὴν ἐνέργειαν καὶ τὴν οὐσίαν ἀποδιδούς, ἔτι δὲ μὴ διαιρετὸν μηδὲ ποσόν τι λέγων, ἀλλ' ἁπλῶς ἐξαίρων εἰς κρείττω τινὰ μερίδα καὶ θειοτέραν. That everything has a natural desire for the good is also stated by Theoph. in the fr. (from περὶ πλούτου) *Schol. in Plat. Legg.* p. 449, 8 Bekk.: εἰ ζωὴν εἶχεν ὁ πλοῦτος, πρὸς μόνους ἂν ἀπῆλθε τοὺς ἀγαθούς. ἕκαστον γὰρ τοῦ οἰκείου ἐφίεται ἀγαθοῦ, for this alone accords with its nature, πάντα δὲ τῆς κατὰ φύσιν ὀρέγεται διαθέσεως.

[2] § 7 sq. (where l. 12 W for ἀνήνυτον we should perhaps read ἄριστον). In § 8 the remark relating to the Platonists (τί οὖν ἅμα τῇ μιμήσει, &c.) is hardly intelligible, probably on account of the corruption of the text. The sense ascribed to it by BRANDIS, iii. 328 sq. (q.v.), seems to be neither contained in the text nor admissible in itself. In the following words (εἰ δὴ ἔφεσις, ἄλλως τε καὶ τοῦ ἀρίστου, μετὰ ψυχῆς, εἰ μή τις λέγοι καθ' ὁμοιότητα καὶ διαφορὰν, ἔμψυχ' ἂν εἴη τὰ κινούμενα) USENER, p. 267, in place of διαφορὰν happily reads μεταφορὰν: 'unless the expression ἔφεσις is used by a mere analogy and improperly.' Even the fragment quoted in the previous note speaks only of living things.

as things above it desire the best? And how is it that in the heavenly sphere this desire produces nothing higher than rotation? For the movements of the soul and the reason are of a higher order than this. To this, however, it might be replied that all things cannot attain to like perfection. Finally we might ask whether motion and desire are essential or merely accidental attributes of the heavens.[1] Touching further on the necessity of deducing not only some but all reality from first principles,[2] we find that even in reference to these first principles themselves many new questions are suggested. Are they formless and material, or endowed with form, or both? And if the first of these assumptions is obviously inadmissible, there is also a difficulty in attributing design to everything however insignificant. We should therefore have to determine how far order extends in the world and why it ceases at certain points.[3] Again, what are we to say of rest? Has it, like motion, to be deduced as something real from our first principles, or does positive reality belong only to energy—among sensible objects only to motion—and is rest only a cessation of motion?[4] How, again, are we to describe the relation of Form and Matter? Is matter

[1] § 9–11. In § 10 instead of *συμβαίνει* USENER reads *λαμβάνει*; it would be better to read: *συμβαίνει γὰρ εἶναι κ. συμβ.*

[2] § 11–13 where, however, p. 153, W. n. we must punctuate thus: *ἀπὸ δ' οὖν ταύτης ἢ τούτων τῶν ἀρχῶν ἀξιώσειεν ἄν τις, τάχα δὲ καὶ ἀπὸ τῶν ἄλλων ἄρ', ἄν τις τιθῆται, τὰ ἐφεξῆς εὐθὺς ἀποδιδόναι καὶ μὴ μέχρι του προελθόντα παύεσθαι*—as the Platonists are accused in the sequel of doing.

[3] § 14 sqq.; § 15 n.—where instead of *αὐτὸ* we ought to read *αὖ τό*.

[4] This apparently is the sense of the first half of § 16: what follows, however, as it stands, is, as BRANDIS, p. 332, says, unintelligible.

non-existent although endowed with potential reality, or is it an existence although still void of any definite form?[1] Why is the whole universe divided into contraries so that there is nothing without its opposite? Why does the worse far exceed in quantity the better?[2] And since on account of this diversity in things knowledge also is of different kinds, the question rises what method we are to adopt in each case and how we are to define the nature and the kinds of knowledge.[3] To assign causes to everything is impossible, for we cannot go on *ad infinitum* either in the sensible or the supersensible world without renouncing the possibility of knowledge; but we can go a little way in that direction in advancing from the sensible to the supersensible. When, however, we reach ultimate grounds of reality we can go no further, either because these have themselves no cause or because our eyes are too weak to penetrate into the brightest light.[4] But if it be thought that the mind knows these by immediate contact and therefore infallibly,[5] yet it is not easy, however necessary, to say what it is of which we make this assertion and which is the object of this immediate knowledge.[6] Granted,

[1] § 17. Instead of *δυνάμει δ' ἓν* (Br.) or *δυνάμει μὲν ὂν* (W.) we ought probably to read *δυνάμει δ' ὄν*.

[2] § 18.

[3] §§ 19–20. We cannot here enter into particulars; see, however, BRANDIS, iii. 334 sq. USENER, *ibid.* p. 269 sq. places c. 8 Br. (§§ 19–27 W.) between cc. 3 and 4 Br. (§§ 13 and 14 W.)

[4] The latter is a deviation from Aristotle's doctrine (on which cf. *supra*, vol. i. p. 205, n. 2, and p. 246 sqq.) in the same direction as the statement *Metaph.* ii. (α) 1, 993, b, 9: *ὥσπερ γὰρ καὶ τὰ τῶν νυκτερίδων ὄμματα πρὸς τὸ φέγγος ἔχει τὸ μεθ' ἡμέραν, οὕτω καὶ τῆς ἡμετέρας ψυχῆς ὁ νοῦς πρὸς τὰ τῇ φύσει φανερώτατα πάντων.*

[5] For Aristotle's view see *sup.* vol. i. p. 197, n. 4.

[6] So we should understand the words § 26: *χαλεπὴ δὲ καὶ εἰς αὐτὸ τοῦθ' ἡ σύνεσις καὶ ἡ πίστις . . . . ἐν*

further, that the world and the structure of the heavens is eternal [1] and that we cannot, therefore, point to the causes of its origin, the problem yet remains of assigning the moving causes and the final aim of the constitution of the world, and of explaining individual forms of existence, down to animals and plants. Astronomy as such is inadequate to meet the former of those demands; since motion is just as essential to the heavens as life is to living creatures, we must seek a deeper origin for it in the essence and ultimate cause of the heavens themselves.[2] Upon the question of design in the world it is not always clear, apart from other considerations,[3] whether a thing exists for a definite end or only in consequence of a chance coincidence or natural necessity;[4] and even assuming design in the world, we are yet unable to prove its presence equally in every case, but must admit that there is much

*τίνι ποιητέον τὸν ὅρον.* BRANDIS, p. 336, explains: 'where we are to place a limit on inquiry,' which the text does not seem to permit. For the rest see §§ 24 sq.

[1] § 26 *fin.* must be read: *πέφυκεν· ὅσοι δὲ τὸν οὐρανὸν ἀΐδιον ὑπολαμβάνουσιν ἔτι δὲ*, &c. SPENGEL (see BRANDIS, p. 337) had already changed the unmeaning *ἡμέρων* into *ἢ μερῶν*.

[2] This at any rate seems to be the meaning of § 27 sq. (*εἰ οὖν ἀστρολογία*, &c.)

[3] These are indicated § 28. USENER, *Anal. Theophr.* 48, here proposes: *ἄλλως θ' ὁ ἀφορισμὸς οὐ ῥᾴδιος . . . . καὶ δὴ τῷ ἔνια μὴ δοκεῖν*, &c. In that case '*πόθεν τ' ἄρξασθαι χρή*' may be suggested instead of (*ῥᾴδιος . . . .*) *πόθεν δ' ἄρξασθαι χρῆν*. Otherwise one might, still reading *ἄλλως*, omit the *μάτην* which precedes as an explanatory gloss: *ὑπὲρ δὲ τοῦ πάνθ' ἕνεκά του καὶ μηθὲν ἄλλως, ὁ ἀφορισμὸς οὐ ῥᾴδιος*, &c. *'Αφορισμὸς* here is equivalent to *ὁρισμὸς*, as in the passage from THEOPHRASTUS in SIMPL. *Phys.* 94, a.

[4] Theophr. gives examples §§ 29 sq. where, however, § 30 instead of *τούτων χάριν* we must read with USENER (*Rhein. Mus.* xvi. 278) *τοῦ χάριν*. In what follows, it seems that the words *καὶ ταῦτ'*, &c. are somewhat out of order.

that seems to oppose its realisation, and even that the amount of this is largely in excess of that which clearly exhibits design—in other words, that evil is largely in excess over good.[1]

It is impossible from so mutilated a fragment to obtain any very exact information as to the views of Theophrastus upon the ultimate grounds of reality. We only see from it that he was not blind to the difficulties of the Aristotelian doctrine, and that he brought these into prominence especially in connexion with the question of the relation between the *movens* and the *motum* and with the teleological view of nature. We must nevertheless admit that even in his *Metaphysics* he has kept closely to the main lines of the Master's doctrine, as is obvious from his own express statements on several important heads,[2] and from the general fact that we

[1] §§ 28–34. In § 31 read: εἰ δὲ μὴ τοιοῦ [or τοιοῦ; ἕνεκά του καὶ εἰς τὸ ἄριστον, λῃπτέον, and immediately after: καὶ ἁπλῶς λεγόμενα (Br. and W. λέγομεν ἃ, καὶ καθ' ἕκαστον. In what follows ἐπὶ τῶν ζῴων will then correspond to καθ' ἕκαστον. In § 32 we ought perhaps to read: ἀκαριαῖον τὸ βέλτιον καὶ τὸ εἶναι . . . . πολὺ δὲ πλῆθος (without ἢ or εἶναι) τὸ κακόν. In what follows the text may have originally been: οὐκ ἐν ἀοριστίᾳ δὲ μόνον καὶ οἷον ὕλης εἴδει, καθάπερ τὰ τῆς φύσεως (in the world of men—for the allusion must be to this—there is not only, as in nature, indeterminateness and materiality, but also evil). After this, however, there seems to be a gap; and of the missing words ἀμαθεστάτου alone has survived. Similarly in the following passage to the protasis εἰ γὰρ—ἑκατέρωθεν (*Ph. d. Gr.* i. 852, 3, where, however USENER's conjecture, *ibid.* 260, τὰ δ' ἄδρεα καὶ ἑκατέρωθεν ought to have been mentioned) an apodosis is needed: this (the rarity of goodness) is even truer of Man. Of the next passage we have only a fragment in the words τὰ μὲν οὖν —ὄντα. The remainder is probably complete or nearly complete; the discussion, however, then breaks suddenly off and we are left without means of conjecturing its further course. In § 33 USENER's conjecture (*ibid.*) ἐπιμιμεῖσθαι τὸ θεῖον ἅπαντα (for ἐπιμ. γε θέλειν ἅπ.) has much to support it.

[2] Besides the theological doctrines hereafter to be discussed we may note the distinc-

nowhere hear of any deviations from it. Even what little has come down to us of Theophrastus's theological views harmonises in every respect with the doctrines of Aristotle. It is indeed urged against him that he declares God at one time to be Spirit, at another Heaven and the Stars;[1] but the same objection is urged against Aristotle,[2] whose view we must have wholly misunderstood if we do not find an easy explanation of it in the fact that while he identifies God

tion between form and matter (*Metaph.* 17, THEMIST. *De An.* 91, a, m) with all that it involves, and the Aristotelian teleology. The latter Theophr. expresses in Aristotelian phraseology, *Caus. Pl.* i. 1, 1 (cf. ii. 1, 1): ἡ γὰρ φύσις οὐδὲν ποιεῖ μάτην ἥκιστα δὲ ἐν τοῖς πρώτοις καὶ κυριωτάτοις. *Ibid.* i. 16, 11 (where moreover we must read 'ῃ δ'' in place of ἡ δ'): ἀεὶ πρὸς τὸ βέλτιστον ὁρμᾷ [ἡ φύσις]. Cf. iv. 4, 2; 1, 2. Art, again, is partly an imitation (*Caus.* ii. 18, 2), partly a support and completion (*ibid.* ii. 16, 5, i. 16, 10 sq. v. 1, 1) of the designs of nature; it differs, however (*Caus.* i. 16, 10, cf. *sup.* vol. i. p. 418, n. 3), from nature in that the latter operates from within outwards, and therefore spontaneously (ἐκ τῶν αὐτομάτων), while it works from without by force, and therefore only piecemeal (*Caus.* i. 12, 4); hence it is that art produces much that is unnatural (*ibid.* i. 16, 11, v. 1, 1 sq.). Even this is not without a purpose, but it serves not the original design of nature but certain ends of man (cf. v. 1, 1); these two, however, do not coincide and may even contradict one another (*Caus.* i. 16, 1; 21, 1 sq. iv. 4, 1—Theophr. here distinguishes in reference to fruits and their ripeness τὴν τελειότητα τήν τε πρὸς ἡμᾶς καὶ τὴν πρὸς γένεσιν. ἡ μὲν γὰρ πρὸς τροφὴν ἡ δὲ πρὸς δύναμιν τοῦ γεννᾶν). Nevertheless even the unnatural can by habit change its nature (*Caus.* ii. 5, 5, iii. 8, 4, iv. 11, 5, 7); and on the other hand many vegetables and animals are, Theophr. believes, entrusted by nature herself to the care of man, whereby only they can reach perfection, and just herein consists the difference between wild and tame (*Caus.* i. 16, 23) which, as we shall find hereafter, he regards as not merely an artificial but a natural distinction.

[1] The Epicurean in CIC. *N. D.* i. 13, 35: *nec vero Theophrasti inconstantia ferenda est; modo enim menti divinæ tribuit principatum, modo cælo, tum autem signis sideribusque cælestibus.* CLEMENS, *Protrept.* c. 5, 44, B: Θεόφρ. . . . . πῇ μὲν οὐρανὸν πῇ δὲ πνεῦμα τὸν θεὸν ὑπονοεῖ.

[2] CIC. *ibid.* § 33, cf. KRISCHE, *Forsch.* 276 sqq.

in the highest sense with infinite spirit alone, he yet conceives of the motive forces in the stellar spheres, and especially in the highest of them, as eternal and divine beings. Theophrastus holds this view also. To him also God in an absolute sense is pure reason,[1] the single cause which co-ordinates all reality, and which, itself unmoved, produces motion in everything else, since everything else desires it.[2] In proof of this assumption Theophrastus had appealed, it appears, like Aristotle,[3] to the universality of religious beliefs.[4] He also described its universal operation as Providence,[5] without, however, distinguishing this divine causality from the ordinary course of nature,[6] and he demanded of man that

[1] *Metaph.* § 16: ἔστι δὲ [τὸ κινοῦν ἕτερον καὶ ὃ κινεῖ] ἄν τις ἐπ' αὐτὸν ἄγῃ τὸν νοῦν καὶ τὸν θεόν.

[2] *Ibid.* § 4 sq. (see *supra*), where *inter alia*: θεία γὰρ ἡ πάντων ἀρχὴ δι' ἧς ἅπαντα καὶ ἔστι καὶ διαμένει . . . . ἐπεὶ δ' ἀκίνητος καθ' αὑτήν, φανερὸν ὡς οὐκ ἂν εἴη τῷ κινεῖσθαι τοῖς τῆς φύσεως αἰτία, ἀλλὰ λοιπὸν ἄλλῃ τινὶ δυνάμει κρείττονι καὶ προτέρᾳ. τοιαύτη δ' ἡ τοῦ ὀρεκτοῦ φύσις, ἀφ' ἧς ἡ κυκλικὴ [sc. κίνησις, which USENER *ibid.* p. 263 wishes to supply] ἡ συνεχὴς καὶ ἄπαυστος.

[3] On which cf. *sup.* vol. i. p. 390.

[4] We may at least infer this from the fact that in PORPH. *De Abst.* ii. 7 sq. (see also BERNAYS, *Theophr. üb. Frömm.* 56 sq.) he treats the neglect of all worship as an exceptional outrage, on account of which the Thracian Thoans were destroyed by the gods; probably the same people of whom SIMPL. in Epict. *Enchir.* 38. iv. 357 Schweigh. says: πάντες γὰρ ἄνθρωποι . . . . νομίζουσι εἶναι θεὸν πλὴν Ἀκροθοϊτῶν, οὓς ἱστορεῖ Θεόφραστος ἀθέους γενομένους ὑπὸ τῆς γῆς ἀθρόως καταποθῆναι.

[5] MINUC. FEL. *Octav.* 19, 11: *Theophrastus et Zenon, &c.* . . . . *ad unitatem providentiæ omnes revolvuntur.* Cf. PROCL. *in Tim.* 138, e: ἢ γὰρ μόνος ἢ μάλιστα Πλάτων τῇ ἀπὸ τοῦ προνοοῦντος αἰτίᾳ κατεχρήσατο, φησὶν ὁ Θεόφρ.

[6] As is seen from ALEX. APHR., who says at the end of his treatise *De Anima*: φανερώτατα δὲ Θεόφραστος δείκνυσι ταὐτὸν ὂν τὸ καθ' εἱμαρμένην τῷ κατὰ φύσιν ἐν τῷ Καλλισθένει—for εἱμαρμένη indicates the course of the world as divinely appointed, which therefore Theophr. according to his manner identified with the order of nature, as he identified the lot which God has appointed to each individual with a man's natural state. Cf. STOB. *Ecl.* i. 206: φέρεται δέ πως εἰς τὸ εἱμαρμένην

he should imitate its ceaseless intellectual activity.[1] At the same time he follows Aristotle[2] in also attributing a soul to the heavens,[3] whose higher nature reveals itself in its orderly motion;[4] and since he is likewise in agreement with the Aristotelian doctrine of the æther as the material of the heavenly structure[5] and of the eternity of the world,[6] he could attribute blessedness or divinity not only to the highest Heaven, of which it is expressly asserted,[7] but also with equal right to the

εἶναι τὴν ἑκάστου φύσιν· ἐν ᾗ τόπον τεττάρων αἰτιῶν ποικίλων, προαιρέσεως [φύσεως HEEREN and others], τύχης καὶ ἀνάγκης. As regards the two last, τύχη means accident, ἀνάγκη constraint (either of other men or of natural necessity) as distinguished from φύσις or nature acting with a purpose.—From the allusions to Theophr.'s views upon Providence in Olympiodorus *in Phæd.* ed. Finckh, p. 169, 7 nothing can be inferred.

[1] JULIAN, *Orat.* vi. 185, a Spanh.: ἀλλὰ καὶ Πυθαγόρας οἵ τε ἀπ' ἐκείνου μέχρι Θεοφράστου τὸ κατὰ δύναμιν ὁμοιῶσθαι θεῷ φασι. Plato especially expresses himself to this effect; how far it was the view also of Theophr. is seen from the note: καὶ γὰρ καὶ ὁ Ἀριστοτέλης· 'ὃ γὰρ ἡμεῖς ποτὲ, τοῦτο ὁ θεὸς ἀεί' (see *supra*). According to Diog. v. 49 Theophr. wrote a treatise against the Academics on the blessedness of God.

[2] See *supra*, vol. i. p. 495, n. 4.

[3] Procl. *in Tim.* 177, a: Theophrastus deems it unnecessary to base the existence of the soul, as the cause of motion, upon higher principles, as Plato had done. ἔμψυχον γὰρ καὶ αὐτὸς εἶναι δίδωσι τὸν οὐρανὸν καὶ διὰ τοῦτο θεῖον· εἰ γὰρ θεῖός ἐστι, φησί, καὶ τὴν ἀρίστην ἔχει διαγωγήν, ἔμψυχός ἐστιν· οὐδὲν γὰρ τίμιον ἄνευ ψυχῆς, ὡς ἐν τῷ περὶ Οὐρανοῦ γέγραφεν. (See also on the last head p. 281, b. *Plat. Theol.* i. 12, p. 35 Hamb.)

[4] Upon this see *Metaph.* § 34. CIC. *Tusc.* i. 19, 45: *hæc enim pulchritudo etiam in terris patriam illam et avitam (ut ait Theophrastus) philosophiam cognitionis cupiditate incensam excitavit* refers to the beauty of the heavens. By πάτριος καὶ παλαιὰ φιλοσοφία is meant, as the context also shows, knowledge of the heavens, or astronomy.

[5] According to TAURUS (*Scholiast to Timæus*, *Bekker's Scholia* p. 437 and PHILOP. *Ætern.* m. xiii. 15), Theophr. rejected Aristotle's doctrine of the aether on the ground of Plato's assertion (*Tim.* 31 B) that all that is solid and visible must consist of fire and earth.

[6] On this see *infra*, p. 380.

[7] See n. 2 and the quotation from Aristotle *sup.* vol. i. p. 474.

other heavenly spheres.[1] Between him and Aristotle there is in this regard no difference of doctrine.

Theophrastus, however, devoted much more attention to scientific than to metaphysical inquiries, and had indeed much more talent for them. That here also he continued to build upon the foundations laid by Aristotle is beyond question; but we find him exerting himself not only to supplement the results of his teacher by further observation, but also to correct them by re-examination of his scientific conceptions. With this view he instituted an inquiry in a work of his own [2] into the conception of Motion which lay at the root of the Aristotelian doctrine of Nature;[3] and he found it necessary to deviate in some respects from the teaching of Aristotle on this head. He asserted, for instance, that Motion, which he agreed with Aristotle in defining as the realisation of potentiality,[4] may be predicated in

[1] As Theophr. according to the passage quoted, *sup.* vol. i. p. 461, 3 accepted Aristotle's theory of spheres, he was obliged to presuppose also with Aristotle an eternal mover for each sphere—an hypothesis which was forced upon him also by the principles of the Peripatetic philosophy with respect to mover and moved.

[2] The three books π. κινήσεως. On these and on the eight books of the *Physics* (if there were really so many) see PHILIPPSON, Ὕλη ἀνθρ. p. 84, USENER, *Anal. Theophr.* 5, 8, and BRANDIS, iii. 281. The last rightly remarks, as ROSE, *Arist. libr. ord.* 87 had already done, that the 'eleventh' book π. κινήσεως and the 'fourteenth' of the Physics in SIMPL. *Phys.* 23, a, and *Categ.* 100, β (*Schol.* 331, a, 10, 92, b, 23) have arisen out of mere clerical errors (τῷ ια' and τῷ ιδ' out of ΤΩΙ Α). From ἐνδεκάτῳ in the former passage came next δεκάτῳ in the Aldine text.

[3] Theophrastus also says that physics have to do only with the *motum* (see *sup.* vol. i. p. 417 sq.); see *supra*, vol. ii. p. 357, n. 1.

[4] ἐνέργεια τοῦ δυνάμει κινητοῦ ᾗ κινητὸν κατὰ γένος ἕκαστον τῶν κατηγοριῶν—ἡ τοῦ δυνάμει ὄντος ᾗ τοιοῦτον ἐντελέχεια—ἐνέργειά τις ἀτελὴς τοῦ δυνάμει ὄντος ᾗ τοιοῦτον καθ' ἕκαστον γένος τῶν κατηγοριῶν (THEOPHR. Fr. 19 sq. 23 b, SIMPL. *Phys.* 201, b, 94, a, m. *Categ. ibid.*) ἀτελὴς γὰρ ἡ κίνησις (TH.

all the categories; as change is not confined, as Aristotle tried to prove,[1] to substance, size, quality, locality, but is also applicable to relation, position, &c.[2] Again, Aristotle had asserted that all change takes place gradually, and therefore that everything which changes must be divisible;[3] Theophrastus maintained, on the contrary, the possibility—which Aristotle himself elsewhere[4] admits

apud THEMIST. *De An.* p. 199, 20 Sp.). It is plain from the quotation, *sup.* vol. i. p. 383, n. 1, that this completely agrees with Aristotle. Nor is it easy to see in SIMPL. *Categ.* 77, ε. *Phys.* 202, a, the deviation from Aristotle which RITTER (iii. 413 sq.) finds. The first passage (Fr. 24) runs: *τούτῳ μὲν γὰρ* (Theophrastus) *δοκεῖ μὴ χωρίζεσθαι τὴν κίνησιν τῆς ἐνεργείας, εἶναι δὲ τὴν μὲν κίνησιν καὶ ἐνέργειαν ὡς ἂν ἐν αὐτῇ περιεχομένην, οὐκέτι μέντοι καὶ τὴν ἐνέργειαν κίνησιν· τὴν γὰρ ἑκάστου οὐσίαν καὶ τὸ οἰκεῖον εἶδος ἐνέργειαν εἶναι ἑκάστου μὴ οὖσαν ταύτην κίνησιν.* This means, however: every motion is an energy, but every energy is not a motion; energy is the wider, motion the narrower conception. It is almost the opposite, therefore, to RITTER'S explanation: that he refuses to comprehend either the conception of energy under that of motion 'or the conception of motion under the conception of energy.' *Phys.* 202, a, SIMPL. says: *ὁ Θεόφραστος ζητεῖν δεῖν φησι περὶ τῶν κινήσεων εἰ αἱ μὲν κινήσεις εἰσὶν, αἱ δὲ ὥσπερ ἐνέργειαί τινες,* which he cites, however, only as proof that Theophr. uses *κίνησις* not merely of motion in space, but of any change. In this more general sense he may have understood particularly the 'motion of the soul' (see *infra*). Aristotle also, however, frequently uses *κίνησις* synonymously with *μεταβολὴ,* and even he calls motion energy as well as entelechy (see *sup.* vol. i. p. 383, n. 1): while, on the other hand, Theophr. as well as Aristotle says that it is only an incomplete energy. According to Priscian (in his paraphrase of the *Physics* bk. v. p. 287, *Theophr. Opp.* ed. Wimm. iii. 269) he says expressly: *ταῦτα δὲ* [*ἐνέργεια* and *κίνησις*] *διαφέρει· χρῆσθαι δὲ ἀναγκαῖον ἐνίοτε τοῖς αὐτοῖς ὀνόμασιν.*

[1] See *supra*, vol. i. p. 423, n. 1.

[2] THEOPHR. Fr. 19, 20, 23 (cf. *sup.* vol. ii. p. 373, n. 4). The remark in Fr. 20 on the motion of relation is obscure, and in the words: *ἡ γὰρ ἐνέργεια κίνησίς τε καὶ καθ' αὑτὸ* the text is probably corrupt. Perhaps we ought to read: *ἡ γὰρ ἐνεργείᾳ κίνησις τοῦ καθ' αὑτό.* But even so the passage is not quite clear.

[3] *Phys.* vi. 4 *init.* (see *supra*, vol. i. p. 439, n. 3), cf. c. 10.

[4] *Phys.* i. 3, 186, a, 13, and in the discussions upon light see *supra*, vol. i. p. 518, n. 3.

—of a simultaneous change in all parts of a mass.[1] Aristotle finally, in connection with the same subject, had assumed that, although there is a moment at which a change is completed, there is none at which it begins;[2] Theophrastus rightly held this to be inconceivable.[3] He further took serious exception to Aristotle's doctrine of space.[4] If space is the limit set by the surrounding to the surrounded body, the latter must be a plain surface; space would move, along with the surrounding body, which is inconceivable; nor would every body be in space, since the outermost circle would not be; moreover, all that is in space would cease to be so, without, however, itself suffering any change, if the surrounding body coalesced with it in one whole or were wholly removed.[5] Theophrastus was himself inclined to define space as the order and position of bodies relatively to

[1] THEMIST. *Phys.* vi. 4, p. 381, 23 sqq. c. 5, 389, 8 sqq. Cf. SIMPL. *Phys.* 233, a, m (Fr. 54 sqq.). On the other hand the citation from Theophrastus in SIMPL. *Phys.* 23, a, is not directed against Aristotle, but is in agreement with him against Melinus.

[2] See *supra*, vol. i. p. 439, n. 4.

[3] SIMPL. *Phys.* 230, a, m. THEMIST. *Phys.* p. 386, 16 Sp. (*Schol.* 410, b, 44, 411, a, 6). Cf. Eudemus in SIMPL. 231, b (Fr. 67 Sp.).

[4] In respect to time, on the other hand, he wholly agreed with Aristotle; SIMPL. *Phys.* 187, a, m. cf. *Categ. Schol. in Ar.* 79, b, 25; controverting apparently, like Eudemus (according to SIMPL. *Phys.* 165, a, and b, Fr. 46 Sp.), Plato's views upon time.

[5] Fr. 21, b, SIMPL. *Phys.* 141, a, m.; Theophrastus objects in the *Physics* to Aristotle's definition of space, ὅτι τὸ σῶμα ἔσται ἐν ἐπιφανείᾳ, ὅτι κινούμενος ἔσται ὁ τόπος [but according to SIMPL. *Phys.* 131, b, 136, a. 141, b, 143, a, Theophrastus and Eudemus treated it as an axiom that space is immobile, as Aristotle also had done, see *sup.* vol. i. p. 432 sq. *Phys.* iv. 4, 212, a, 18 sqq.], ὅτι οὐ πᾶν σῶμα ἐν τόπῳ (οὐδὲ γὰρ ἡ ἀπλανὴς), ὅτι, ἐὰν συναχθῶσιν αἱ σφαῖραι, καὶ ὅλος ὁ οὐρανὸς οὐκ ἔσται ἐν τόπῳ [cf. ARIST. *Phys.* iv. 4, 211, a, 29], ὅτι τὰ ἐν τόπῳ ὄντα, μηδὲν αὐτὰ μετακινηθέντα, ἐὰν ἀφαιρεθῇ τὰ περιέχοντα αὐτὰ, οὐκέτ ἔσται ἐν τόπῳ.

as things above it desire the best? And how is it that in the heavenly sphere this desire produces nothing higher than rotation? For the movements of the soul and the reason are of a higher order than this. To this, however, it might be replied that all things cannot attain to like perfection. Finally we might ask whether motion and desire are essential or merely accidental attributes of the heavens.[1] Touching further on the necessity of deducing not only some but all reality from first principles,[2] we find that even in reference to these first principles themselves many new questions are suggested. Are they formless and material, or endowed with form, or both? And if the first of these assumptions is obviously inadmissible, there is also a difficulty in attributing design to everything however insignificant. We should therefore have to determine how far order extends in the world and why it ceases at certain points.[3] Again, what are we to say of rest? Has it, like motion, to be deduced as something real from our first principles, or does positive reality belong only to energy—among sensible objects only to motion—and is rest only a cessation of motion?[4] How, again, are we to describe the relation of Form and Matter? Is matter

[1] § 9–11. In § 10 instead of *συμβαίνει* USENER reads *λαμβάνει*; it would be better to read: *συμβαίνει γὰρ εἶναι κ. συμβ.*

[2] § 11–13 where, however, p. 153, W. n. we must punctuate thus: *ἀπὸ δ' οὖν ταύτης ἢ τούτων τῶν ἀρχῶν ἀξιώσειεν ἄν τις, τάχα δὲ καὶ ἀπὸ τῶν ἄλλων ἄρ', ἄν τις τιθῆται, τὰ ἐφεξῆς εὐθὺς ἀποδιδόναι καὶ μὴ μέχρι του προελθόντα παύεσθαι*—as the Platonists are accused in the sequel of doing.

[3] § 14 sqq.; § 15 n.—where instead of *αὐτὸ* we ought to read *αὖ τό*.

[4] This apparently is the sense of the first half of § 16: what follows, however, as it stands, is, as BRANDIS, p. 332, says, unintelligible.

non-existent although endowed with potential reality, or is it an existence although still void of any definite form?[1] Why is the whole universe divided into contraries so that there is nothing without its opposite? Why does the worse far exceed in quantity the better?[2] And since on account of this diversity in things knowledge also is of different kinds, the question rises what method we are to adopt in each case and how we are to define the nature and the kinds of knowledge.[3] To assign causes to everything is impossible, for we cannot go on *ad infinitum* either in the sensible or the supersensible world without renouncing the possibility of knowledge; but we can go a little way in that direction in advancing from the sensible to the supersensible. When, however, we reach ultimate grounds of reality we can go no further, either because these have themselves no cause or because our eyes are too weak to penetrate into the brightest light.[4] But if it be thought that the mind knows these by immediate contact and therefore infallibly,[5] yet it is not easy, however necessary, to say what it is of which we make this assertion and which is the object of this immediate knowledge.[6] Granted,

[1] § 17. Instead of *δυνάμει δ' ἓν* (Br.) or *δυνάμει μὲν ὂν* (W.) we ought probably to read *δυνάμει δ' ὄν*.

[2] § 18.

[3] §§ 19-20. We cannot here enter into particulars; see, however, BRANDIS, iii. 334 sq. USENER, *ibid.* p. 269 sq. places c. 8 Br. (§§ 19-27 W.) between cc. 3 and 4 Br. (§§ 13 and 14 W.)

[4] The latter is a deviation from Aristotle's doctrine (on which cf. *supra*, vol. i. p. 205, n. 2, and p. 246 sqq.) in the same direction as the statement *Metaph.* ii. (α) 1, 993, b, 9: *ὥσπερ γὰρ καὶ τὰ τῶν νυκτερίδων ὄμματα πρὸς τὸ φέγγος ἔχει τὸ μεθ' ἡμέραν, οὕτω καὶ τῆς ἡμετέρας ψυχῆς ὁ νοῦς πρὸς τὰ τῇ φύσει φανερώτατα πάντων.*

[5] For Aristotle's view see *sup.* vol. i. p. 197, n. 4.

[6] So we should understand the words § 26: *χαλεπὴ δὲ καὶ εἰς αὐτὸ τοῦθ' ἡ σύνεσις καὶ ἡ πίστις . . . . ἐν*

further, that the world and the structure of the heavens is eternal[1] and that we cannot, therefore, point to the causes of its origin, the problem yet remains of assigning the moving causes and the final aim of the constitution of the world, and of explaining individual forms of existence, down to animals and plants. Astronomy as such is inadequate to meet the former of those demands; since motion is just as essential to the heavens as life is to living creatures, we must seek a deeper origin for it in the essence and ultimate cause of the heavens themselves.[2] Upon the question of design in the world it is not always clear, apart from other considerations,[3] whether a thing exists for a definite end or only in consequence of a chance coincidence or natural necessity;[4] and even assuming design in the world, we are yet unable to prove its presence equally in every case, but must admit that there is much

*τίνι ποιητέον τὸν ὅρον.* BRANDIS, p. 336, explains: 'where we are to place a limit on inquiry,' which the text does not seem to permit. For the rest see §§ 24 sq.

[1] § 26 *fin.* must be read: *πέφυκεν· ὅσοι δὲ τὸν οὐρανὸν ἀΐδιον ὑπολαμβάνουσιν ἔτι δὲ,* &c. SPENGEL (see BRANDIS, p. 337) had already changed the unmeaning *ἡμέρων* into *ἢ μερῶν.*

[2] This at any rate seems to be the meaning of § 27 sq. (*εἰ οὖν ἀστρολογία,* &c.)

[3] These are indicated § 28. USENER, *Anal. Theophr.* 48, here proposes: *ἄλλως θ' ὁ ἀφορισμὸς οὐ ῥᾴδιος . . . . καὶ δὴ τῷ ἔνια μὴ δοκεῖν,* &c. In that case '*πόθεν τ' ἄρξασθαι χρή*' may be suggested instead of (*ῥᾴδιος . . . .*) *πόθεν δ' ἄρξασθαι χρῆν.* Otherwise one might, still reading *ἄλλως*, omit the *μάτην* which precedes as an explanatory gloss: *ὑπὲρ δὲ τοῦ πάνθ' ἕνεκά του καὶ μηθὲν ἄλλως, ὁ ἀφορισμὸς οὐ ῥᾴδιος,* &c. *'Αφορισμὸς* here is equivalent to *ὁρισμὸς*, as in the passage from THEOPHRASTUS in SIMPL. *Phys*. 94, a.

[4] Theophr. gives examples §§ 29 sq. where, however, § 30 instead of *τούτων χάριν* we must read with USENER (*Rhein. Mus.* xvi. 278) *τοῦ χάριν.* In what follows, it seems that the words *καὶ ταῦτ',* &c. are somewhat out of order.

that seems to oppose its realisation and even that the amount of this is largely in excess of that which clearly exhibits design—in other words, that 'evil' is largely in excess over 'good.'[1]

It is impossible from so mutilated a fragment to obtain any very exact information as to the views of Theophrastus upon the ultimate grounds of reality. We only see from it that he was not blind to the difficulties of the Aristotelian doctrine, and that he brought these into prominence especially in connection with the question of the relation between the *movens* and the *motum* and with the teleological view of nature. We must nevertheless admit that even in his *Metaphysics* he has kept closely to the main lines of the Master's doctrine, as is obvious from his own express statements on several important heads,[2] and from the general fact that we

[1] §§ 28–34. In § 31 read: *εἰ δὲ μὴ τοῦθ'* [or *ταῦθ'*] *ἕνεκά του καὶ εἰς τὸ ἄριστον, ληπτέον*, and immediately after: *καὶ ἁπλῶς λεγόμενα* (Br. and W. *λέγομεν ἃ*) *καὶ καθ' ἕκαστον*. In what follows *ἐπὶ τῶν ζῴων* will then correspond to *καθ' ἕκαστον*. In § 32 we ought perhaps to read: *ἀκαριαῖον τὸ βέλτιον καὶ τὸ εἶναι . . . . πολὺ δὲ πλῆθος* (without *ᾗ* or *εἶναι*) *τὸ κακόν*. In what follows the text may have originally been: *οὐκ ἐν ἀοριστίᾳ δὲ μόνον καὶ οἷον ὕλης εἴδει, καθάπερ τὰ τῆς φύσεως* (in the world of men—for the allusion must be to this—there is not only, as in nature, indeterminateness and materiality, but also evil). After this, however, there seems to be a gap; and of the missing words *ἀμαθεστάτου* alone has survived. Similarly in the following passage to the protasis *εἰ γὰρ—ἑκατέρωθεν* (*Ph. d. Gr.* i. 852, 3, where, however USENER's conjecture, *ibid.* 280, *τὰ δ' ἀθρόα καὶ ἑκατέρωθεν* ought to have been mentioned) an apodosis is needed: this (the rarity of goodness) is even truer of Man. Of the next passage we have only a fragment in the words *τὰ μὲν οὖν—ὄντα*. The remainder is probably complete or nearly complete; the discussion, however, then breaks suddenly off and we are left without means of conjecturing its further course. In § 33 USENER's conjecture (*ibid.*) *ἐπιμιμεῖσθαι τὸ θεῖον ἅπαντα* (for *ἐπιμ. γε θέλειν ἅπ.*) has much to support it.

[2] Besides the theological doctrines hereafter to be discussed we may note the distinc-

nowhere hear of any deviations from it. Even what little has come down to us of Theophrastus's theological views harmonises in every respect with the doctrines of Aristotle. It is indeed urged against him that he declares God at one time to be Spirit, at another Heaven and the Stars;[1] but the same objection is urged against Aristotle,[2] whose view we must have wholly misunderstood if we do not find an easy explanation of it in the fact that while he identifies God

tion between form and matter (*Metaph.* 17, THEMIST. *De An.* 91, a, m) with all that it involves, and the Aristotelian teleology. The latter Theophr. expresses in Aristotelian phraseology, *Caus. Pl.* i. 1, 1 (cf. ii. 1, 1): ἡ γὰρ φύσις οὐδὲν ποιεῖ μάτην ἥκιστα δὲ ἐν τοῖς πρώτοις καὶ κυριωτάτοις. *Ibid.* i. 16, 11 (where moreover we must read 'ῃ δ'' in place of ἡ δ'): ἀεὶ πρὸς τὸ βέλτιστον ὁρμᾷ [ἡ φύσις]. Cf. iv. 4, 2; 1, 2. Art, again, is partly an imitation (*Caus.* ii. 18, 2), partly a support and completion (*ibid.* ii. 16, 5, i. 16, 10 sq. v. 1, 1) of the designs of nature; it differs, however (*Caus.* i. 16, 10, cf. *sup.* vol. i. p. 418, n. 3), from nature in that the latter operates from within outwards, and therefore spontaneously (ἐκ τῶν αὐτομάτων), while it works from without by force, and therefore only piecemeal (*Caus.* i. 12, 4); hence it is that art produces much that is unnatural (*ibid.* i. 16, 11, v. 1, 1 sq.). Even this is not without a purpose, but it serves not the original design of nature but certain ends of man (cf. v. 1, 1); these two, however, do not coincide and may even contradict one another (*Caus.* i. 16, 1; 21, 1 sq. iv. 4, 1—Theophr. here distinguishes in reference to fruits and their ripeness τὴν τελειότητα τήν τε πρὸς ἡμᾶς καὶ τὴν πρὸς γένεσιν. ἡ μὲν γὰρ πρὸς τροφὴν ἡ δὲ πρὸς δύναμιν τοῦ γεννᾷν). Nevertheless even the unnatural can by habit change its nature (*Caus.* ii. 5, 5, iii. 8, 4, iv. 11, 5, 7); and on the other hand many vegetables and animals are, Theophr. believes, entrusted by nature herself to the care of man, whereby only they can reach perfection, and just herein consists the difference between wild and tame (*Caus.* i. 16, 23) which, as we shall find hereafter, he regards as not merely an artificial but a natural distinction.

[1] The Epicurean in CIC. *N. D.* i. 13, 35: *nec vero Theophrasti inconstantia ferenda est; modo enim menti divinæ tribuit principatum, modo cælo, tum autem signis sideribusque cælestibus.* CLEMENS, *Protrept.* c. 5, 44, B: Θεόφρ. . . . . πῇ μὲν οὐρανὸν πῇ δὲ πνεῦμα τὸν θεὸν ὑπονοεῖ.

[2] CIC. *ibid.* § 33, cf. KRISCHE, *Forsch.* 276 sqq.

in the highest sense with infinite spirit alone, he yet conceives of the motive forces in the stellar spheres, and especially in the highest of them, as eternal and divine beings. Theophrastus holds this view also. To him also God in an absolute sense is pure reason,[1] the single cause which co-ordinates all reality, and which, itself unmoved, produces motion in everything else, since everything else desires it.[2] In proof of this assumption Theophrastus had appealed, it appears, like Aristotle,[3] to the universality of religious beliefs.[4] He also described its universal operation as Providence,[5] without, however, distinguishing this divine causality from the ordinary course of nature,[6] and he demanded of man that

[1] *Metaph.* § 16: ἔστι δὲ [τὸ κινοῦν ἕτερον καὶ ὃ κινεῖ] ἄν τις ἐπ' αὐτὸν ἄγῃ τὸν νοῦν καὶ τὸν θεόν.

[2] *Ibid.* § 4 sq. (see *supra*), where *inter alia*: θεία γὰρ ἡ πάντων ἀρχὴ δι' ἧς ἅπαντα καὶ ἔστι καὶ διαμένει . . . . ἐπεὶ δ' ἀκίνητος καθ' αὑτήν, φανερὸν ὡς οὐκ ἂν εἴη τῷ κινεῖσθαι τοῖς τῆς φύσεως αἰτία, ἀλλὰ λοιπὸν ἄλλῃ τινὶ δυνάμει κρείττονι καὶ προτέρᾳ. τοιαύτη δ' ἡ τοῦ ὀρεκτοῦ φύσις, ἀφ' ἧς ἡ κυκλικὴ [sc. κίνησις, which USENER *ibid.* p. 263 wishes to supply] ἡ συνεχὴς καὶ ἄπαυστος.

[3] On which cf. *sup.* vol. i. p. 390.

[4] We may at least infer this from the fact that in PORPH. *De Abst.* ii. 7 sq. (see also BERNAYS, *Theophr. üb. Frömm.* 56 sq.) he treats the neglect of all worship as an exceptional outrage, on account of which the Thracian Thoans were destroyed by the gods; probably the same people of whom SIMPL. in Epict. *Enchir.* 38. iv. 357 Schweigh. says: πάντες γὰρ ἄνθρωποι . . . . νομίζουσι εἶναι θεὸν πλὴν Ἀκροθοϊτῶν, οὓς ἱστορεῖ Θεόφραστος ἀθέους γενομένους ὑπὸ τῆς γῆς ἀθρόως καταποθῆναι.

[5] MINUC. FEL. *Octav.* 19, 11: *Theophrastus et Zenon, &c.* . . . . *ad unitatem providentiæ omnes revolvuntur.* Cf. PROCL. *in Tim.* 138, e: ἢ γὰρ μόνος ἢ μάλιστα Πλάτων τῇ ἀπὸ τοῦ προνοοῦντος αἰτίᾳ κατεχρήσατο, φησὶν ὁ Θεόφρ.

[6] As is seen from ALEX. APHR., who says at the end of his treatise *De Anima*: φανερώτατα δὲ Θεόφραστος δείκνυσι ταὐτὸν ὂν τὸ καθ' εἱμαρμένην τῷ κατὰ φύσιν ἐν τῷ Καλλισθένει—for εἱμαρμένη indicates the course of the world as divinely appointed, which therefore Theophr. according to his manner identified with the order of nature, as he identified the lot which God has appointed to each individual with a man's natural state. Cf. STOB. *Ecl.* i. 206: φέρεται δέ πως εἰς τὸ εἱμαρμένην

he should imitate its ceaseless intellectual activity.[1] At the same time he follows Aristotle[2] in also attributing a soul to the heavens,[3] whose higher nature reveals itself in its orderly motion;[4] and since he is likewise in agreement with the Aristotelian doctrine of the æther as the material of the heavenly structure[5] and of the eternity of the world,[6] he could attribute blessedness or divinity not only to the highest Heaven, of which it is expressly asserted,[7] but also with equal right to the

εἶναι τὴν ἑκάστου φύσιν· ἐν ᾗ τόπον τεττάρων αἰτιῶν ποικίλων, προαιρέσεως [φύσεως HEEREN and others], τύχης καὶ ἀνάγκης. As regards the two last, τύχη means accident, ἀνάγκη constraint (either of other men or of natural necessity) as distinguished from φύσις or nature acting with a purpose.—From the allusions to Theophr.'s views upon Providence in Olympiodorus *in Phæd.* ed. Finckh, p. 169, 7 nothing can be inferred.

[1] JULIAN, *Orat.* vi. 185, a Spanh.: ἀλλὰ καὶ Πυθαγόρας οἵ τε ἀπ' ἐκείνου μέχρι Θεοφράστου τὸ κατὰ δύναμιν ὁμοιῶσθαι θεῷ φασι. Plato especially expresses himself to this effect; how far it was the view also of Theophr. is seen from the note: καὶ γὰρ καὶ ὁ Ἀριστοτέλης· 'ὃ γὰρ ἡμεῖς ποτὲ, τοῦτο ὁ θεὸς ἀεί' (see *supra*). According to Diog. v. 49 Theophr. wrote a treatise against the Academics on the blessedness of God.

[2] See *supra*, vol. i. p. 495, n. 4.

[3] Procl. *in Tim.* 177, a: Theophrastus deems it unnecessary to base the existence of the soul, as the cause of motion, upon higher principles, as Plato had done. ἔμψυχον γὰρ καὶ αὐτὸς εἶναι δίδωσι τὸν οὐρανὸν καὶ διὰ τοῦτο θεῖον· εἰ γὰρ θεῖός ἐστι, φησί, καὶ τὴν ἀρίστην ἔχει διαγωγήν, ἔμψυχός ἐστιν· οὐδὲν γὰρ τίμιον ἄνευ ψυχῆς, ὡς ἐν τῷ περὶ Οὐρανοῦ γέγραφεν. (See also on the last head p. 281, b. *Plat. Theol.* i. 12, p. 35 Hamb.)

[4] Upon this see *Metaph.* § 34. CIC. *Tusc.* i. 19, 45: *hæc enim pulchritudo etiam in terris patriam illam et avitam (ut ait Theophrastus) philosophiam cognitionis cupiditate incensam excitavit* refers to the beauty of the heavens. By πάτριος καὶ παλαιὰ φιλοσοφία is meant, as the context also shows, knowledge of the heavens, or astronomy.

[5] According to TAURUS (*Scholiast to Timæus*, *Bekker's Scholia* p. 437 and PHILOP. *Ætern.* m. xiii. 15), Theophr. rejected Aristotle's doctrine of the aether on the ground of Plato's assertion (*Tim.* 31 B) that all that is solid and visible must consist of fire and earth.

[6] On this see *infra*, p. 380.

[7] See n. 2 and the quotation from Aristotle *sup.* vol. i. p. 474.

other heavenly spheres.[1] Between him and Aristotle there is in this regard no difference of doctrine.

Theophrastus, however, devoted much more attention to scientific than to metaphysical inquiries, and had indeed much more talent for them. That here also he continued to build upon the foundations laid by Aristotle is beyond question; but we find him exerting himself not only to supplement the results of his teacher by further observation, but also to correct them by re-examination of his scientific conceptions. With this view he instituted an inquiry in a work of his own [2] into the conception of Motion which lay at the root of the Aristotelian doctrine of Nature;[3] and he found it necessary to deviate in some respects from the teaching of Aristotle on this head. He asserted, for instance, that Motion, which he agreed with Aristotle in defining as the realisation of potentiality,[4] may be predicated in

[1] As Theophr. according to the passage quoted, *sup.* vol. i. p. 461, 3 accepted Aristotle's theory of spheres, he was obliged to presuppose also with Aristotle an eternal mover for each sphere—an hypothesis which was forced upon him also by the principles of the Peripatetic philosophy with respect to mover and moved.

[2] The three books π. κινήσεως. On these and on the eight books of the *Physics* (if there were really so many) see PHILIPPSON, Ὕλη ἀνθρ. p. 84, USENER, *Anal. Theophr.* 5, 8, and BRANDIS, iii. 281. The last rightly remarks, as ROSE, *Arist. libr. ord.* 87 had already done, that the 'eleventh' book π. κινήσεως and the 'fourteenth' of the Physics in SIMPL. *Phys.* 23, a, and *Categ.* 100, β (*Schol.* 331, a, 10, 92, b, 23) have arisen out of mere clerical errors (τῷ ια′ and τῷ ιδ′ out of ΤΩΙ Α). From ἐνδεκάτῳ in the former passage came next δεκάτῳ in the Aldine text.

[3] Theophrastus also says that physics have to do only with the *motum* (see *sup.* vol. i. p. 417 sq.); see *supra*, vol. ii. p. 357, n. 1.

[4] ἐνέργεια τοῦ δυνάμει κινητοῦ ᾗ κινητὸν κατὰ γένος ἕκαστον τῶν κατηγοριῶν—ἡ τοῦ δυνάμει ὄντος ᾗ τοιοῦτον ἐντελέχεια—ἐνέργειά τις ἀτελὴς τοῦ δυνάμει ὄντος ᾗ τοιοῦτον καθ' ἕκαστον γένος τῶν κατηγοριῶν (THEOPHR. Fr. 19 sq. 23 b, SIMPL. *Phys.* 201, b, 94, a, m. *Categ. ibid.*) ἀτελὴς γὰρ ἡ κίνησις (TH.

all the categories; as change is not confined, as Aristotle tried to prove,[1] to substance, size, quality, locality, but is also applicable to relation, position, &c.[2] Again, Aristotle had asserted that all change takes place gradually, and therefore that everything which changes must be divisible;[3] Theophrastus maintained, on the contrary, the possibility—which Aristotle himself elsewhere[4] admits

apud THEMIST. *De An.* p. 199, 20 Sp.). It is plain from the quotation, *sup.* vol. i. p. 383, n. 1, that this completely agrees with Aristotle. Nor is it easy to see in SIMPL. *Categ.* 77, ε. *Phys.* 202, a, the deviation from Aristotle which RITTER (iii. 413 sq.) finds. The first passage (Fr. 24) runs: *τούτῳ μὲν γὰρ* (Theophrastus) *δοκεῖ μὴ χωρίζεσθαι τὴν κίνησιν τῆς ἐνεργείας, εἶναι δὲ τὴν μὲν κίνησιν καὶ ἐνέργειαν ὡς ἂν ἐν αὐτῇ περιεχομένην, οὐκέτι μέντοι καὶ τὴν ἐνέργειαν κίνησιν· τὴν γὰρ ἑκάστου οὐσίαν καὶ τὸ οἰκεῖον εἶδος ἐνέργειαν εἶναι ἑκάστου μὴ οὖσαν ταύτην κίνησιν.* This means, however: every motion is an energy, but every energy is not a motion; energy is the wider, motion the narrower conception. It is almost the opposite, therefore, to RITTER'S explanation: that he refuses to comprehend either the conception of energy under that of motion 'or the conception of motion under the conception of energy.' *Phys.* 202, a, SIMPL. says: *ὁ Θεόφραστος ζητεῖν δεῖν φησι περὶ τῶν κινήσεων εἰ αἱ μὲν κινήσεις εἰσὶν, αἱ δὲ ὥσπερ ἐνέργειαί τινες*, which he cites, however, only as proof that Theophr. uses *κίνησις* not merely of motion in space, but of any change. In this more general sense he may have understood particularly the 'motion of the soul' (see *infra*). Aristotle also, however, frequently uses *κίνησις* synonymously with *μεταβολή*, and even he calls motion energy as well as entelechy (see *sup.* vol. i. p. 383, n. 1): while, on the other hand, Theophr. as well as Aristotle says that it is only an incomplete energy. According to Priscian (in his paraphrase of the *Physics* bk. v. p. 287, *Theophr. Opp.* ed. Wimm. iii. 269) he says expressly: *ταῦτα δὲ* [*ἐνέργεια* and *κίνησις*] *διαφέρει· χρῆσθαι δὲ ἀναγκαῖον ἐνίοτε τοῖς αὐτοῖς ὀνόμασιν.*

[1] See *supra*, vol. i. p. 423, n. 1.

[2] THEOPHR. Fr. 19, 20, 23 (cf. *sup.* vol. ii. p. 373, n. 4). The remark in Fr. 20 on the motion of relation is obscure, and in the words: *ἡ γὰρ ἐνέργεια κίνησίς τε καὶ καθ' αὑτὸ* the text is probably corrupt. Perhaps we ought to read: *ἡ γὰρ ἐνεργείᾳ κίνησις τοῦ καθ' αὑτό.* But even so the passage is not quite clear.

[3] *Phys.* vi. 4 *init.* (see *supra*, vol. i. p. 439, n. 3), cf. c. 10.

[4] *Phys.* i. 3, 186, a, 13, and in the discussions upon light see *supra*, vol. i. p. 518, n. 3.

—of a simultaneous change in all parts of a mass.[1] Aristotle finally, in connection with the same subject, had assumed that, although there is a moment at which a change is completed, there is none at which it begins;[2] Theophrastus rightly held this to be inconceivable.[3] He further took serious exception to Aristotle's doctrine of space.[4] If space is the limit set by the surrounding to the surrounded body, the latter must be a plain surface; space would move, along with the surrounding body, which is inconceivable; nor would every body be in space, since the outermost circle would not be; moreover, all that is in space would cease to be so, without, however, itself suffering any change, if the surrounding body coalesced with it in one whole or were wholly removed.[5] Theophrastus was himself inclined to define space as the order and position of bodies relatively to

[1] THEMIST. *Phys.* vi. 4, p. 381, 23 sqq. c. 5, 389, 8 sqq. Cf. SIMPL. *Phys.* 233, a, m (Fr. 54 sqq.). On the other hand the citation from Theophrastus in SIMPL. *Phys.* 23, a, is not directed against Aristotle, but is in agreement with him against Melinus.

[2] See *supra*, vol. i. p. 439, n. 4.

[3] SIMPL. *Phys.* 230, a, m. THEMIST. *Phys.* p. 386, 16 Sp. (*Schol.* 410, b, 44, 411, a, 6). Cf. Eudemus in SIMPL. 231, b (Fr. 67 Sp.).

[4] In respect to time, on the other hand, he wholly agreed with Aristotle; SIMPL. *Phys.* 187, a, m. cf. *Categ. Schol. in Ar.* 79, b, 25; controverting apparently, like Eudemus (according to SIMPL. *Phys.* 165, a, and b, Fr. 46 Sp.), Plato's views upon time.

[5] Fr. 21, b, SIMPL. *Phys.* 141, a, m.; Theophrastus objects in the *Physics* to Aristotle's definition of space, *ὅτι τὸ σῶμα ἔσται ἐν ἐπιφανείᾳ, ὅτι κινούμενος ἔσται ὁ τόπος* [but according to SIMPL. *Phys.* 131, b, 136, a. 141, b, 143, a, Theophrastus and Eudemus treated it as an axiom that space is immobile, as Aristotle also had done, see *sup.* vol. i. p. 432 sq. *Phys.* iv. 4, 212, a, 18 sqq.], *ὅτι οὐ πᾶν σῶμα ἐν τόπῳ (οὐδὲ γὰρ ἡ ἀπλανὴς), ὅτι, ἐὰν συναχθῶσιν αἱ σφαῖραι, καὶ ὅλος ὁ οὐρανὸς οὐκ ἔσται ἐν τόπῳ* [cf. ARIST. *Phys.* iv. 4, 211, a, 29], *ὅτι τὰ ἐν τόπῳ ὄντα, μηδὲν αὐτὰ μετακινηθέντα, ἐὰν ἀφαιρεθῇ τὰ περιέχοντα αὐτὰ, οὐκέτ ἔσται ἐν τόπῳ.*

one another.[1] Of less importance are some other statements quoted from the portions of his *Physics* which dealt with more general questions.[2] In his treatise upon the elements[3] to which the extant passage upon fire belongs, while holding fast to Aristotelian principles,[4] he nevertheless finds certain difficulties. While all other elements are themselves definite materials, fire (whether we take it to include light or not) only exists in materials which burn and give light; how then can it be treated as an elementary substance? This can only be the case if we assume that in a higher region[5] heat is pure and unmixed, whereas upon earth

[1] SIMPL. *ibid*. 149, b, m. (Fr. 22): Theophrastus says, though only as a suggestion (ὡς ἐν ἀπορίᾳ προάγων τὸν λόγον): 'μήποτε οὐκ ἔστι καθ' αὑτὸν οὐσία τις ὁ τόπος, ἀλλὰ τῇ τάξει καὶ θέσει τῶν σωμάτων λέγεται κατὰ τὰς φύσεις καὶ δυνάμεις, ὁμοίως δ' ἐπὶ ζῴων καὶ φυτῶν καὶ ὅλως τῶν ἀνομοιομερῶν, εἴτε ἐμψύχων εἴτε ἀψύχων, ἔμμορφον δὲ τὴν φύσιν ἐχόντων· καὶ γὰρ τούτων τάξις τις καὶ θέσις τῶν μερῶν ἐστι πρὸς τὴν ὅλην οὐσίαν· διὸ καὶ ἕκαστον ἐν τῇ αὑτοῦ χώρᾳ λέγεται τῷ ἔχειν τὴν οἰκείαν τάξιν, ἐπεὶ καὶ τῶν τοῦ σώματος μερῶν ἕκαστον ἐπιποθήσειεν ἂν καὶ ἀπαιτήσειε τὴν ἑαυτοῦ χώραν καὶ θέσιν.'

[2] At the beginning of his treatise he had illustrated the beginning of Aristotle's with the remark that all natural existences have their principles as all natural bodies are composite (SIMPL. *Phys*. 2, b, 5, b, m. *Schol. in Ar*. 324, a, 22, 325, b, 15. PHILOP. *Phys*. A, 2, m.); in the third book, which was also entitled π. οὐρανοῦ, he distinguishes three kinds of becoming: by means of something similar, something opposite, and something which is neither similar nor opposite to that which comes to be but only in general a previous actuality (Fr. 16, b, SIMPL. *ibid.* 287, a).

[3] According to Alex. in SIMPL. *De Cœlo*, *init*., *Schol*. 468, a, 11, Theophrastus had discussed these in the treatise π. οὐρανοῦ, which however (*ibid*. 435, b, 33, and previous note) is the same as *Physics*, Bk. iii. SIMPL. *De Cœlo*, 517, a, 31, however, cites also a special work by him, περὶ τῆς τῶν στοιχείων γενέσεως (USENER, *Anal*. 21, thinks perhaps the same as Diog., v. 39, calls π. γενέσεως).

[4] The composition of the elements of heat, cold, &c. (see *sup*. vol. i. p. 478 sqq.; to this account, *e.g. De Igne*, 26: τὸ γὰρ πῦρ θερμὸν καὶ ξηρόν refers). Similarly the theory of the natural weight and levity of bodies; cf. *De Vent*. 22, *De Sensu*, 88 sq.

[5] ἐν αὐτῇ τῇ πρώτῃ σφαίρᾳ, by

it is only found in union with something else and in a process of becoming; but in this case we must again ask whether terrestrial fire springs from the heavenly element or owes its origin to certain states and movements in burning material.[1] Again, how are we to explain the sun? If it consists of a kind of fire, this must be very different from other fire; if it does not consist of fire, we should then have to explain how it can kindle fire. In any case we should have to admit that not only fire but also heat are properties. But how is it possible to admit this with regard to heat, which is a far more universal and elementary principle than fire? This suggests further questions. Are heat, cold, &c. really first principles and not merely attributes?[2] Are the so-called simple bodies not rather composite things? since even moisture cannot be without fire, for if it were it would freeze; nor can the earth be wholly without moisture, for if it were it would fall to pieces.[3] We are not, however, justified in ascribing to Theophrastus on account of these criticisms an actual departure from the Aristotelian doctrine.[4] [He is only following his general custom of pointing out the difficulties which his Master's view involves, without necessarily giving it up.]

It is the less necessary to follow Theophrastus

which, however, only the first elemental sphere can be meant.

[1] *De Igne*, 3–5. Cf. also OLYMPIODORUS in *Meteorol.* i. 137, *id.*

[2] *Ibid.* 5–7, where § 6 with the words: *ἐν ὑποκειμένῳ τινὶ καὶ τὸ πῦρ καὶ ὁ ἥλιος τὸ θερμόν* we must supply *ἔχει.*

[3] *Ibid.* 8: *φαίνεται γὰρ οὕτω λαμβάνουσι τὸ θερμὸν καὶ τὸ ψυχρὸν ὥσπερ πάθη τινῶν εἶναι, οὐκ ἀρχαὶ καὶ δυνάμεις· ἅμα δὲ καὶ ἡ τῶν ἁπλῶν λεγομένων φύσις μικτή τε καὶ ἐνυπάρχουσα ἀλλήλοις* &c.

[4] Aristotle also says that the elements do not present themselves separately in actuality; see *supra*, vol. i. p. 482, n. 4.

further in his discussion of fire, inasmuch as, in spite of many true observations, he not unfrequently proceeds upon false assumptions and fails to bring to the elucidation of the facts any actual knowledge of the processes of combustion.[1] Nor need we enter into his account of wind[2] (the cause of which he traces to the motion of the sun and warm vapours[3]), of the origin of rain,[4] of the signs of the weather,[5] of stones,[6] of smells,[7] tastes,[8]

[1] Thus, for the explanation of several actual or supposed phenomena, we have such assumptions as that the smaller fire (as also ARIST. supposes, *Gen. et Corr.* i. 7, 323, b, 8) is consumed by the greater, or that it is suppressed and suffocated by the density of the air (Fr. 3, 10 sq. 58; Fr. 10, 1 sq ); that a cold environment increases the interior heat by repulsion (ἀντιπερίστασις) (*ibid.* 13, 15, 18, 74, π. ἱδρώτ. 23, π. λειποψυχ. Fr. 10, 6; *Caus. Pl.* i. 12, 3, vi. 18, 11, and *passim*; cf. the Index under ἀντιπερίστασις, ἀντιπεριΐστασθαι. PLUT. *Qu. Nat.* 13, p. 915) and the like. Hence also the statement (in SIMPL. *De Cœlo*, 268, a, 27; *K. Schol.* 513, a, 28) that there have been cases of sparks darting from men's eyes.

[2] Π. ἀνέμων (Fr. 5). In § 5 of this work mention is also made of that π. ὑδάτων (cf. DIOG. v. 45; USENER, *Anal. Theophr.* 7).

[3] *Ibid.* §§ 19 sq. ALEX. in *Meteorol.* 100, b; cf. *sup.* vol. i. p.514 sq. Theophrastus had spoken more fully on this subject in an earlier treatise—*De Vent.* 1.

[4] On this see OLYMPIODORUS on *Meteorol.* i. 222 *id.*

[5] Π. σημείων ὑδάτων καὶ πνευμάτων καὶ χειμώνων καὶ εὐδιῶν (Fr. 6).

[6] Π. λίθων (Fr. 2), according to § 59 written during the Archonship of Praxibulus (Ol. 116, 2, 315 B.C.) At the beginning of this essay the treatise on Metals, on which cf. USENER, p. 6, and *supra*, vol. i. p. 84, n. 1, is mentioned. THEOPHR. (*ibid.*) makes stones consist of earth, metals of water, herein (see *sup.* vol. i. p. 514) connecting his doctrine with that of Aristotle, whom he follows in general in the treatment of this subject (see SCHNEIDER's references in his *Commentar*, iv. 535 sqq. and *passim*), except that he goes much more deeply into particulars than Aristotle did in the corresponding section of the *Meteorology* (iii. 6).

[7] On smells and tastes cf. *Caus. Pl.* vi. 1–5 (on those of plants, the rest of the book); on smells alone: περὶ ὀσμῶν (Fr. 4). Theophrastus here treats of the kinds of smells which do not permit of such sharp separation as the kinds of tastes, and next with great fullness of particular fragrant or offensive substances, their mixture, &c. Cf. also PLUT. *Qu. Conv.* i. 6, 1, 4.

[8] On these also he had written

light,[1] colours,[2] sounds.[3] His view of the structure of

a special treatise, according to DIOG. v. 46, in five books (cf. USENER, p. 8, and *sup.* vol. i. p. 84, n. 1); *Caus. Pl.* vi. 1, 2, 4, 1, he enumerates seven chief tastes with an obvious reminiscence of ARIST. *De Sensu*, 4, 442, a, 19 (see *sup.* vol. i. p. 85). *Ibid.* c. 1, 1 he gives a definition of χυμός, which agrees with that of Aristotle (see *sup.* vol. i. p. 518). OLYMPIOD. in *Meteorol.* i. 286 *id.* mentions an assumption with reference to the briny taste of sea water (that it comes from the nature of the bottom of the sea).

[1] Theophrastus had explained his theory on this subject in the fifth book of the *Physics*, of which fragments have been preserved to us in PRISCIAN'S *Paraphrase* (see PHILIPPSON, Ὕλη ἀνθρωπίνη, pp. 241 sqq.; WIMMER, *Theophr. Opp.* iii. 232 sqq.). On light and transparency cf. § 16 sqq. The διαφανὲς is, according to the view here presented, which agrees with Aristotle's (see *sup.* vol. i. p. 518, n. 3), not a body but a property or state of certain bodies, and when light is called the ἐνέργεια τοῦ διαφανοῦς (§ 18), ἐνέργεια must be understood in the wider sense of a πάθημα or certain change in the transparent. The idea that light is a material emanation is rejected.

[2] All that can be obtained on this subject from the works of Theophrastus (to which, however, the pseudo Aristotelian treatise on Colours does not belong; cf. *supra*, vol ii. p. 355, n. 2) is almost entirely in agreement with Aristotle, and it is brought together by PRANTL, *Arist. üb. d. Farben*, 181 sqq. Fr. 89, 3, 6 also belongs to this group.

[3] Theophr. had discussed these in the treatise upon Music. In the fragment of this treatise which Porphyry has preserved (Fr. 89) in *Ptol. Harm.* (WALLISH, *Opp.* iii. 241 sqq.) he controverts the assumption that the difference between higher and lower notes is merely a numerical one. We cannot assert that the higher note either consists of more parts or moves more swiftly (πλείους ἀριθμοὺς κινεῖται § 3, which according to § 6 *fin.* seems to refer to the greater swiftness of motion by means of which in the same time it traverses a greater number of equal spaces) than the lower (the former was Heraclides', the latter Plato's and Aristotle's assumption; see *Ph. d. Gr.* i. 887, 1, 655 n. and *sup.* vol. i. p. 519). For in the first place if the essence of sound is number, then wherever we have number we must also have sound; on the other hand, if number is not the essence of sound, sounds are not distinguished by number only; in the second place observation shows that for a low note an equally strong movement is required as for a high one; and again the two could not accord with one another if they moved with unequal velocity or consisted of an unequal number of movements. If a higher note is audible at a greater distance, this is only because it is transmitted in a merely forward direction, whereas the deep note is transmitted in all directions.

the universe agrees in every respect with Aristotle's.[1] He shares also his doctrine that the world is without beginning or end, defending it, *à propos* of Aristotle's physical theory, with great fullness and success against the founder of the Stoic school.[2] And since among

He holds that intervals do not explain the difference in notes, they merely make the latter perceptible by omission of the intermediate notes. In their case much more than in that of colours a qualitative difference must be admitted. Wherein this difference, however, consists, Theophr. does not seem more precisely to have defined.

[1] We see this from the statement of Simplicius on the retrogressive spheres quoted *sup*. vol. i. p. 502, n. 1, and that of Pseudo-Alex. in *Metaph.* 678, 13 Bon. (807, b, 9 Br.) which agrees with it. The remark Fr. 171 (π. τῶν Ἰχθύων) 6 that the air is nearer the fire than is the water refers to Aristotle's assumption that the elements lie round the earth in the form of a sphere. We need not believe that Theophr. held the Milky Way, as MACROB. *Somn. Scip.* i. 15 supposes, to be the band that unites the two hemispheres of which the celestial sphere is composed; he may have compared it with such a band, but the idea that the celestial sphere is really composed of two parts is inconsistent with Aristotle's doctrine that the world by reason of the nature of its materials can only have the form of a perfect sphere (see *sup*. vol. i. p. 486 sq.). It has already been remarked *sup*. vol. ii. p. 372, that Theophrastus follows Aristotle in his general view of the world.

[2] The extract from his treatise on this subject given in the pseudo-Philo has already been considered, *sup*. vol. ii. p. 354, n. 3. Theophr. here (c. 23 sqq. Bern.) controverts four arguments of his opponent and maintains against them (as is shown in ZELLER'S *Hermes*, xi. 424 sq.) c. 25, p. 270, 6 sqq. that in the first place their assertion that if the world were without beginning all unevenness in the earth's surface must long ago have been levelled, overlooks the fact that the fire in the earth which originally heaved up the mountains (cf. on this Theophr. F. 2, 3) also keeps them up; and in the second place if from the retreat of the sea which has taken place at particular places, a final exhaustion of it and an absorption of all elements in fire are inferred, this overlooks the fact that that decrease (as Aristotle had previously taught, see *sup*. vol. ii. p. 30, n. 2) is a merely local one and is counterbalanced by an increase at other places; just as little in the third place does it follow from the transitoriness of all particular parts of the world, that the world as a whole is transitory, inasmuch as the destruction of one thing is always the birth of another (cf. on this *sup*. vol. i. p. 485). If finally

other presuppositions of the Peripatetic system the eternity of the human race was involved in the eternity of the world,[1] while on the other hand the relatively recent origin of civilisation was recognised by Theophrastus and illustrated by researches into the origin of the arts upon which it depends[2] and of religious rites,[3] he assumed with his Master that there occurred from time to time overwhelming natural disasters which, covering vast territories, either totally annihilated the inhabitants or reduced them again to the primeval state of barbarism.[4] The mistake, in fact, which Aristotle made in assuming with the old astronomy that in the eternity of the universe is involved also that of the earth and the human race,[5] reveals itself again in Theophrastus.

Striking proof of Theophrastus's ability in the field of natural history is afforded by his two works upon

man and therefore also the world is said to have had a beginning, because the arts without which man cannot live have had one, Theophr. opposes to this view the theory developed in the text.

[1] Cf. *sup.* vol. ii. p. 32, n. 1.

[2] Diog. v. 47 mentions two books by him *π. εὑρημάτων*.

[3] See more on this subject, *infra*.

[4] It is not permissible, says the pseudo-Philo, c. 27, p. 274, 3 sqq. Bern., to judge the antiquity of man from that of the arts. For *φθοραὶ τῶν κατὰ γῆν οὐκ ἀθρόων ἁπάντων ἀλλὰ τῶν πλείστων δυσὶ ταῖς μεγίσταις αἰτίαις ἀνατίθενται, πυρὸς καὶ ὕδατος ἀλέκτοις φοραῖς. κατασκήπτειν δ' ἑκατέραν ἐν μέρει φασὶν ἐν πάνυ μακραῖς ἐνιαυτῶν περιόδοις*: and after further explaining how both kinds of devastation occur, and how the inhabitants of the mountains are swept away by the one, those of the valleys and plains by the other, he proceeds: *κατὰ δὴ τοὺς λεχθέντας τρόπους δίχα μυρίων ἄλλων βραχυτέρων φθειρομένου τοῦ πλείστου μέρους ἀνθρώπων ἐπιλιπεῖν ἐξ ἀνάγκης καὶ τὰς τέχνας . . . ἐπειδὰν δὲ αἱ μὲν κοιναὶ νόσοι χαλάσωσιν, ἄρξηται δὲ ἀνηβᾷν καὶ βλαστάνειν τὸ γένος ἐκ τῶν μὴ προκαταληφθέντων τοῖς ἐπιβρίσασι δεινοῖς, ἄρχεσθαι καὶ τὰς τέχνας πάλιν συνίστασθαι, οὐ τὸ πρῶτον γενομένας, ἀλλὰ τῇ μειώσει τῶν ἐχόντων ὑποσπανισθείσας.*

[5] Cf. on this *Phil.-histor. Abhandl. der Berl. Akademie*, 1878, pp. 105 sq.

plants.[1] Observations are there collected with the most unwearied diligence from all regions of the world accessible at that time. All the information attainable by the insufficient means and methods at the disposal of the investigator of the period, not only upon the form and parts, but also upon the development, the cultivation, the use, and the geographical distribution of a large number of plants,[2] is there set down. His statements are moreover in general so reliable, and where they rest on the testimony of others so cautious, that they give us the most favourable impression of his power of observation and critical skill. Neither ancient nor mediæval times have any botanical work of equal importance to compare with the writings of Theophrastus. The scientific explanation of the facts, however, was necessarily in the highest degree unsatisfactory, since neither botany nor science in general was as yet adequate to this task. Aristotle was able in his geological works to compensate in some degree for the like defect both by the general grandeur of his fundamental thoughts and in particular by a multitude of brilliant conjectures and startling observations; but Theophrastus cannot be compared with his Master in either of these respects.

[1] According to KIRCHNER, *Die Botan. Schrift d. Th.* (*Jahrb. f. Philol. Supplementb.* vii.) p. 497, he names 550 plants, and of these there are about 170 with regard to which we do not know whether they had been previously known. As, however, he omits several with regard to which it can be proved that they were known before his time, we cannot assume that he intended to enumerate all that were known to him.

[2] Cf. what BRANDIS, iii. 298 sqq., KIRCHNER, 499 sqq., have collected from the writings of Theophrastus on the sources and compass of his botanical knowledge.

The fundamental ideas of his botanical theory are taken from Aristotle.[1] Plants are living creatures.[2] Theophrastus does not make express mention of a soul in them; he regards their natural heat and moisture as the seat of their life,[3] finding in these also the chief ground of the individual peculiarities by which they are differentiated from one another.[4] But in order that they may germinate and grow, a suitable external environment is indispensable.[5] Their progress and perfection, their improvement or deterioration depend, therefore, in this respect, primarily upon the heat and

[1] KIRCHNER, *ibid.* 514 sqq. gives us a comparison of Theophrastus's botanical theory with Aristotle's so far as we know it.

[2] Ζῶντα, *Caus* i. 4, 5, v. 5, 2; 18, 2; ἔμβια, *ibid.* v. 4, 5; they have not ἔθη [ἤθη] and πράξεις, like the animals, but they have βίους, *Hist.* i. 1, 1.

[3] *Hist.* i. 2, 4: ἅπαν γὰρ φυτὸν ἔχει τινὰ ὑγρότητα καὶ θερμότητα σύμφυτον ὥσπερ καὶ ζῷον, ὧν ὑπολειπόντων γίνεται γῆρας καὶ φθίσις, τελείως δὲ ὑπολιπόντων θάνατος καὶ αὔανσις. Cf. 11, 3; *Caus.* i. 1, 3: for germination there is required ἔμβιος ὑγρότης and σύμφυτον θερμὸν as well as a certain proportion between them. *Hist.* i. 11, 1: the seed contains the σύμφυτον ὑγρὸν καὶ θερμὸν, and if these escape, it loses the power of germination. See further *Caus.* ii. 6, 1 sq. 8, 3, and other passages.

[4] Cf. *Caus.* i. 10, 5. *Ibid.* c. 21, 3: τὰς ἰδίας ἑκάστων φύσεις εἴτ' οὖν ὑγρότητι καὶ ξηρότητι καὶ πυκνότητι [WIMMER'S conjecture] καὶ μανότητι καὶ τοῖς τοιούτοις διαφερούσας εἴτε θερμότητι καὶ ψυχρότητι. The latter, however, he remarks, are difficult to measure: he accordingly exerts himself here and in c. 22 to discover marks by means of which we may recognise the degrees of temperature in a plant, an endeavour in which, as we might suppose, he meets with very little success.

[5] *Caus.* ii. 3, 4: ἀεὶ γὰρ δεῖ λόγον τινὰ ἔχειν τὴν κρᾶσιν τῆς φύσεως πρὸς τὸ περιέχον. 7, 1: τὸ συγγενὲς τῆς φύσεως ἕκαστον ἄγει πρὸς τὸν οἰκεῖον [τόπον] . . . οἷον ἡ θερμότης καὶ ἡ ψυχρότης καὶ ἡ ξηρότης καὶ ἡ ὑγρότης· ζητεῖ γὰρ τὰ πρόσφορα κατὰ τὴν κρᾶσιν. c. 9, 6: ἡ γὰρ ἐπιθυμία πᾶσι τοῦ συγγενοῦς. The statement of BRANDIS (iii. 319) that the efficacy of heat, &c., is conditioned also by the opposite is not to be found either in *Caus.* ii. 9, 9, or anywhere else in Theophrastus, although he states in another connection, *Hist.* v. 9, 7, that passive and active must be heterogeneous.

moisture of the air and the ground and on the effects of sun and rain.[1] The more harmonious the relation in which all these factors stand to one another and to the plant, the more favourable are they to its development,[2] which is therefore conditioned partly by outward influences and partly by the peculiar nature of the plant or the seed, in reference to the latter of which we must again distinguish between the active force and the passive susceptibility to impressions from without.[3] This physical explanation does not, of course, with Theophrastus any more than with Aristotle exclude the teleological, which he finds both in the peculiar perfection of the plant itself and in its usefulness for man, without, however, going deeper into this side of the question or developing it in relation to the rest of his botanical theory.[4]

The chief subjects discussed in the remaining portions of the two works upon plants are the parts, the origin and development, and the classification of plants.

In considering the first of these Theophrastus encounters the question whether annual growths such as leaves, blossoms, and fruit are to be regarded as parts of the plant or not. Without giving a definite answer to this question he inclines to the latter view,[5] and accordingly names as the essential external parts of the

[1] Cf. *Hist.* i. 7, 1; *Caus.* i. 21, 2 sqq. ii. 13, 5, iii. 4, 3; 22, 3, iv. 4, 9 sq. 13, and other passages. In the explanation of the phenomena themselves, Theophrastus indeed not unfrequently gets into difficulty, and rescues himself by assumptions such as that referred to *supra*, vol. ii. p. 378, n. 1, of the compression of internal heat by external cold.

[2] *Caus.* i. 10, 5; 6, 8, ii. 9, 13, iii. 4, 3, and *passim.*

[3] The *δύναμις τοῦ ποιεῖν* and *τοῦ πάσχειν*, *Caus.* iv. 1, 3.

[4] See *supra*, vol. ii. p. 369, n. 2.

[5] *Hist.* i. 1, 1–4.

plant[1] the root, stem (or stalk), branches and twigs.[2] He shows how plants are differentiated by the presence or absence, the character, the size, and the position of these parts,[3] remarking that there is nothing which is found in all plants as invariably as mouth and belly are in animals, and that in view of the infinite variety of botanical forms we must frequently be content with mere analogy.[4] As 'internal parts'[5] he names bark, wood, pith, and as the 'constituent parts' of these again, sap, fibres, veins and pulp.[6] From these, which are permanent, he distinguishes finally the yearly changing elements, which, indeed, in many cases are the whole plant.[7] Here, however, as not unfrequently elsewhere, he takes the tree as the basis of his investigation; it seems to stand with him for the perfect plant, just as humanity stands with Aristotle for the perfect animal and man for the perfect type of humanity.

In his treatment of the origin of plants, Theophrastus points out three distinct methods of propagating them, viz. from seed, from parts of other plants, and by spontaneous generation.[8] The most natural of these is

[1] τὰ ἔξω μόρια (*ibid.*), the ἀνομοιομερῆ (*ibid.* 12, cf. *supra*, vol. i. p. 517, n. 6, and vol. ii. p. 28, n. 1.

[2] ῥίζα, καυλὸς, ἀκρεμὼν, κλάδος . . . ἔστι δὲ ῥίζα μὲν δι' οὗ τὴν τροφὴν ἐπάγεται [it depends on this, *i.e.* on the δύναμις φυσικὴ, not on the position in the ground, *Hist.* i. 6, 9] καυλὸς δὲ εἰς ὃ φέρεται. καυλὸν δὲ λέγω τὸ ὑπὲρ γῆς πεφυκὸς ἐφ' ἕν . . . ἀκρεμόνας δὲ τοὺς ἀπὸ τούτου σχιζομένους, οὓς ἔνιοι καλοῦσιν ὄζους. κλάδον δὲ τὸ βλάστημα τὸ ἐκ τούτων ἐφ' ἓν οἷον μάλιστα τὸ ἐπέτειον, *Hist.* i. 1, 9. Aristotle's view was not altogether identical; see *supra*, vol. ii. p. 35, n. 4.

[3] *Ibid.* 6 sqq.

[4] *Ibid.* 10 sqq.

[5] τὰ ἐντὸς, *ibid.*; τὰ ἐξ ὧν ταῦτα, ὁμοιομερῆ, *ibid.* 2, 1.

[6] *Hist.* i. 2, 1, 3. On the meaning of ἶς, φλὲψ, σὰρξ of plants, see MEYER, *Gesch. der Bot.* i. 160 sq.

[7] *Hist.* i. 2, 1 sq.

[8] Here he follows Aristotle; see *supra*, vol. ii. p. 36.

from seed. All seed-bearing plants employ this method, even if individuals among them exhibit another as well. This law, acccording to Theophrastus, is not only obvious from observation, but follows still more clearly from the consideration that otherwise the seed of such plants would serve no purpose, in a system of nature where nothing, least of all anything so essential as the seed, is purposeless.[1] Theophrastus compares seed, as Empedocles had done, to eggs,[2] but he has no true conception of the fructification and sexual differences of plants. He often distinguishes, indeed, between male and female plants,[3] differing in this from Aristotle;[4] but when we inquire what he means by this, we find, in the first place, that this distinction refers always to plants as a whole and not to the organs of fructification in them, and can apply, therefore, only to the smallest portion of the vegetable kingdom; that, in the second place, it is applied by Theophrastus only to trees, and not even to all these; and, thirdly, that even here it rests not upon any actual knowledge of the process of fructification, but upon vague analogies of popular language.[5]

[1] *Caus.* i. 1, 1 sq. 4, 1; *Hist.* ii. 1, 1, 3.

[2] *Caus.* i. 7, 1, cf. ZELLER, *Ph. d. Gr.* i. 717, 5. So also Aristotle, *Gen. An.* i. 23, 731, a, 4.

[3] See *supra*, vol. ii. p. 34, n. 1, and p. 48.

[4] See Index under ἄρρην and θῆλυς.

[5] It is clear from his whole mode of applying the distinction between male and female plants that Theophrastus was not the first to make it. It is plain that he found it already existing, and that it belongs in fact to the unscientific use of language. He nowhere gives a more exact definition of its significance or its basis; on the contrary, he frequently marks it as a customary division by the use of καλοῦσι or a similar expression (*e.g. Hist.* iii. 3, 7, 8, 1, 12, 6, 15, 3, 18, 5). The division in his text is limited to trees: trees, he says, are divided into male and female (*Hist.* i. 14, 5, iii. 8, 1; *Caus.* i. 22, 1, and *passim*); and nowhere does he

On the other hand

upon the

Among the

slips, bulbs, &c.

call any other

male or female

be says *Hist.*

species of

son with

from a

female

speaks

an

ever,

above

This is enough

division

correct

fructification

that he further

it proves

be set

between

is found

being

less

(*Hist.*

distinction

of male and

contrariwise

of trees

2, 4, 6, c

c. 18. 3; *Caus*

Moreover,

the male have

from seed. All seed-bearing plants employ this method, even if individuals among them exhibit another as well. This law, acccording to Theophrastus, is not only obvious from observation, but follows still more clearly from the consideration that otherwise the seed of such plants would serve no purpose, in a system of nature where nothing, least of all anything so essential as the seed, is purposeless.[1] Theophrastus compares seed, as Empedocles had done, to eggs,[2] but he has no true conception of the fructification and sexual differences of plants. He often distinguishes, indeed, between male and female plants,[3] differing in this from Aristotle;[4] but when we inquire what he means by this, we find, in the first place, that this distinction refers always to plants as a whole and not to the organs of fructification in them, and can apply, therefore, only to the smallest portion of the vegetable kingdom; that, in the second place, it is applied by Theophrastus only to trees, and not even to all these; and, thirdly, that even here it rests not upon any actual knowledge of the process of fructification, but upon vague analogies of popular language.[5]

[1] *Caus.* i. 1, 1 sq. 4, 1; *Hist.* ii. 1, 1, 3.

[2] *Caus.* i. 7, 1, cf. ZELLER, *Ph. d. Gr.* i. 717, 5. So also Aristotle, *Gen. An.* i. 23, 731, a, 4.

[3] See *supra*, vol. ii. p. 34, n. 1, and p. 48.

[4] See Index under ἄρρην and θῆλυς.

[5] It is clear from his whole mode of applying the distinction between male and female plants that Theophrastus was not the first to make it. It is plain that he found it already existing, and that it belongs in fact to the unscientific use of language. He nowhere gives a more exact definition of its significance or its basis; on the contrary, he frequently marks it as a customary division by the use of καλοῦσι or a similar expression (*e.g. Hist.* iii. 3, 7, 8, 1, 12, 6, 15, 3, 18, 5). The division in his text is limited to trees: trees, he says, are divided into male and female (*Hist.* i. 14, 5, iii. 8, 1; *Caus.* i. 22, 1, and *passim*); and nowhere does he

On the other hand, he instituted accurate observations upon the process of germination in some plants.[1] Among the different methods of propagating plants by slips, bulbs, &c., which Theophrastus minutely dis-

call any other plant but a tree male or female; for although he says (*Hist.* iv. 11, 4) of a species of reed that in comparison with others it is θῆλυς τῇ προσόψει, this is quite different from a division into a male and female species. Theophrastus speaks also (*Caus.* vi. 15, 4) of an ὀσμὴ θῆλυς. Even trees, however, do not all fall under the above division; cf. *Hist.* i. 8, 2: καὶ τὰ ἄρρενα δὲ τῶν θηλειῶν ὀζωδέστερα, ἐν οἷς ἐστιν ἄμφω. This is enough to show that the division is not based on any correct concep ions as to the fructification of plants, and all that he further states concerning it proves how little value must be set upon it. The distinction between male and female trees is found to consist in the former being barren, or at any rate less fruitful than the latter (*Hist.* iii. 8, 1). The most general distinction between trees is that of male and female, ὧν τὸ μὲν καρποφόρον τὸ δὲ ἄκαρπον ἐπὶ τινῶν. ἐν οἷς δὲ ἄμφω καρποφόρα, τὸ θῆλυ καλλικαρπότερον καὶ πολυκαρπότερον: some, however, contrariwise call the latter kind of trees male. *Caus.* ii. 10, 1: τὰ μὲν ἄκαρπα τὰ δὲ κάρπιμα τῶν ἀγρίων, ἃ δὴ θήλεα τὰ δ' ἄρρενα καλοῦσιν. Cf. *Hist.* iii. 3, 7, c. 9, 1, 2, 4, 6, c. 10, 4, c. 12, 6, c. 15, 3, c. 18, 5; *Caus.* i. 22, 1, iv. 4, 2). Moreover, it is remarked that the male have more branches (*Hist.* i. 8, 2), and that their wood is harder, of closer tissue, and darker, while the female are more slender (*Hist.* iii. 9, 3, v. 4, 1; *Caus.* i. 8, 4). Only of the date tree does Theophrastus say that the fruit of the female ripens and does not fall off if the pollen of the male fall upon it, and he compares this with the shedding of the spawn by the male fish; but even in this he cannot see fructification in the proper sense, as the fruit is supposed to be already there; his explanation of the matter rather is that the fruit is warmed and dried by the pollen, and he compares the process with the caprification of figs (*Caus.* ii. 9, 15, iii. 18, 1; *Hist.* ii. 8, 4, 6, 6). He never supposes that all seed-formation depends upon fructification. In *Caus.* iii. 18, 1, he expressly rejects the idea which might have been founded upon this fact: πρὸς τὸ τελειογονεῖν μὴ αὔταρκες εἶναι τὸ θῆλυ, remarking that if it were so there would be not only one or two examples of it, but it would necessarily establish itself in all, or at any rate in most, cases. It is not surprising, therefore, that he says (*Caus.* iv. 4, 10) that in the case of plants the earth bears the same relation to the seed as the mother does in the case of animals.

[1] *Hist.* viii. 2, on grain, pulse, and some trees.

cusses,[1] he reckons grafting and budding, in which he says the stem serves as soil for the bud or the graft;[2] and, as a second method of a similar kind, the annual sprouting of plants.[3] In reference, finally, to spontaneous generation, Theophrastus indeed remarks that this is not unfrequently merely apparent, the seeds of many plants being so minute as to escape observation, or having been carried by winds, water and birds to places where we least expect to find them.[4] But that it does actually take place, especially in the case of smaller plants, he does not doubt,[5] and he explains it, like the spontaneous generation of animals, as the result of the decomposition of certain materials under the influence of terrestrial and solar heat.[6]

In classifying plants, Theophrastus arranges them under the four heads of trees, bushes, shrubs and herbs,[7] calling attention at the same time to the unsatisfactoriness of this classification.[8] He further distinguishes

[1] *Hist.* ii. 1 sq. *Caus.* i. 1–4 and *passim.* Also propagation by the so-called tears (δάκρυα), on which see *Caus* i. 4, 6, *Hist.* ii. 2, 1, and cf. MEYER, *Gesch. der Bot.* i. 168.

[2] *Caus.* i. 6.

[3] *Caus.* i. 10, 1, where this subject is further discussed.

[4] *Caus.* i. 5, 2–4, ii. 17, 5; *Hist.* iii. 1, 5.

[5] Cf. *Caus.* i. 1, 2, 5, 1. ii. 9, 14, iv. 4, 10. *Hist.* iii. 1, 4.

[6] *Caus.* i. 5, 5; cf. ii. 9, 6, 17, 5.

[7] *Hist.* i. 3, 1, with the further explanation: δένδρον μὲν οὖν ἐστι τὸ ἀπὸ ῥίζης μονοστέλεχες πολύκλαδον ὀζωτὸν οὐκ εὐαπόλυτον . . . θάμνος δὲ τὸ ἀπὸ ῥίζης πολύκλαδον . . . . φρύγανον δὲ τὸ ἀπὸ ῥίζης πολυστέλεχες καὶ πολύκλαδον . . . . πόα δὲ τὸ ἀπὸ ῥίζης φυλλοφόρον προϊὸν ἀστέλεχες οὗ ὁ καυλὸς σπερμοφόρος.

[8] *Ibid.* 2: δεῖ δὲ τοὺς ὅρους οὕτως ἀποδέχεσθαι καὶ λαμβάνειν ὡς τύπῳ καὶ ἐπὶ τὸ πᾶν λεγομένους· ἔνια γὰρ ἴσως ἐπαλλάττειν δόξειε, τὰ δὲ καὶ παρὰ τὴν ἀγωγὴν [by culture] ἀλλοιότερα γίνεσθαι καὶ ἐκβαίνειν τῆς φύσεως. And after explaining by examples and further enlarging upon this fact, that there are also bushes and herbs with the form of trees, and that we might thus be inclined to lay more stress upon the size, strength and durability of plants,

between garden and wild plants, fruit-bearing and barren, blossoming and non-blossoming, evergreen and deciduous; while admitting that these also are vanishing distinctions, he yet regards them as the common natural characteristics of certain classes.[1] He lays special stress, however, on the division into land and water plants.[2] In his own treatment of plants he follows the first main division, except that he classes trees and bushes together.[3] Into the further contents of his botanical writings, however, we cannot here enter.[4]

Of Theophrastus's work upon Zoology[5] hardly anything remains to us; nor does the information which we possess from other sources as to his zoological doctrines justify us in attributing to him more in this field

he concludes again, § 5: *διὰ δὴ ταῦτα ὥσπερ λέγομεν οὐκ ἀκριβολογητέον τῷ ὅρῳ ἀλλὰ τῷ τύπῳ ληπτέον τοὺς ἀφορισμούς.*

[1] *Hist.* i. 3, 5 sq. and some further remarks c. 14, 3. In respect to the distinction between garden and wild plants especially he observes here and iii. 2, 1 sq. that this is a natural one, as some plants degenerate under cultivation, or at least do not improve; others, on the contrary (*Caus.* i. 16, 13), are designed for it.

[2] *Hist.* i. 4, 2 sq. 14, 3, iv, 6, 1; *Caus.* ii. 3, 5.

[3] Books ii.–v. of the *History of Plants* treat of trees and bushes, therefore of ligneous plants; book vi. of shrubs; books vii. viii. of herbs; book ix. discusses the sap and healing qualities of plants.

[4] BRANDIS, iii. 302 sqq., gives a review of the contents of both works; see also a shorter one in MEYER, *Gesch. der Bot.* i. 159 sqq.

[5] Seven books, which DIOG. v. 43 first enumerates singly by their particular titles, and then comprehends under the common title *π. ζῴων*. Single books are also cited by Athenæus among others; see USENER, p. 5. Theophrastus himself refers (*Caus. Pl.* ii. 17, 9, cf iv. 5, 7) to the *ἱστορίαι περὶ ζῴων*. He does not seem, however (if we may judge from the single titles in Diogenes), to have intended in this work to give a complete natural history, but only (as was his general plan where Aristotle had already laid down the essential principles) to supplement Aristotle's work by a minute treatment of particular points. To this work belong Fr. 171–190.

the universe agrees in every respect with Aristotle's.[1] He shares also his doctrine that the world is without beginning or end, defending it, *à propos* of Aristotle's physical theory, with great fullness and success against the founder of the Stoic school.[2] And since among

He holds that intervals do not explain the difference in notes, they merely make the latter perceptible by omission of the intermediate notes. In their case much more than in that of colours a qualitative difference must be admitted. Wherein this difference, however, consists, Theophr. does not seem more precisely to have defined.

[1] We see this from the statement of Simplicius on the retrogressive spheres quoted *sup.* vol. i. p. 502, n. 1, and that of Pseudo-Alex. in *Metaph.* 678, 13 Bon. (807, b, 9 Br.) which agrees with it. The remark Fr. 171 (π. τῶν Ἰχθύων) 6 that the air is nearer the fire than is the water refers to Aristotle's assumption that the elements lie round the earth in the form of a sphere. We need not believe that Theophr. held the Milky Way, as MACROB. *Somn. Scip.* i. 15 supposes, to be the band that unites the two hemispheres of which the celestial sphere is composed; he may have compared it with such a band, but the idea that the celestial sphere is really composed of two parts is inconsistent with Aristotle's doctrine that the world by reason of the nature of its materials can only have the form of a perfect sphere (see *sup.* vol. i. p. 486 sq.). It has already been remarked *sup.* vol. ii. p. 372, that Theophrastus follows Aristotle in his general view of the world.

[2] The extract from his treatise on this subject given in the pseudo-Philo has already been considered, *sup.* vol. ii. p. 354, n. 3. Theophr. here (c. 23 sqq. Bern.) controverts four arguments of his opponent and maintains against them (as is shown in ZELLER'S *Hermes*, xi. 424 sq.) c. 25, p. 270, 6 sqq. that in the first place their assertion that if the world were without beginning all unevenness in the earth's surface must long ago have been levelled, overlooks the fact that the fire in the earth which originally heaved up the mountains (cf. on this Theophr. F. 2, 3) also keeps them up; and in the second place if from the retreat of the sea which has taken place at particular places, a final exhaustion of it and an absorption of all elements in fire are inferred, this overlooks the fact that that decrease (as Aristotle had previously taught, see *sup.* vol. ii. p. 30, n. 2) is a merely local one and is counterbalanced by an increase at other places; just as little in the third place does it follow from the transitoriness of all particular parts of the world, that the world as a whole is transitory, inasmuch as the destruction of one thing is always the birth of another (cf. on this *sup.* vol. i. p. 485). If finally

other presuppositions of the Peripatetic system the eternity of the human race was involved in the eternity of the world,[1] while on the other hand the relatively recent origin of civilisation was recognised by Theophrastus and illustrated by researches into the origin of the arts upon which it depends[2] and of religious rites,[3] he assumed with his Master that there occurred from time to time overwhelming natural disasters which, covering vast territories, either totally annihilated the inhabitants or reduced them again to the primeval state of barbarism.[4] The mistake, in fact, which Aristotle made in assuming with the old astronomy that in the eternity of the universe is involved also that of the earth and the human race,[5] reveals itself again in Theophrastus.

Striking proof of Theophrastus's ability in the field of natural history is afforded by his two works upon

man and therefore also the world is said to have had a beginning, because the arts without which man cannot live have had one, Theophr. opposes to this view the theory developed in the text.

[1] Cf. *sup.* vol. ii. p. 32, n. 1.

[2] DIOG. v. 47 mentions two books by him π. εὑρημάτων.

[3] See more on this subject, *infra*.

[4] It is not permissible, says the pseudo-Philo, c. 27, p. 274, 3 sqq. Bern., to judge the antiquity of man from that of the arts. For φθοραὶ τῶν κατὰ γῆν οὐκ ἀθρόων ἁπάντων ἀλλὰ τῶν πλείστων δυσὶ ταῖς μεγίσταις αἰτίαις ἀνατίθενται, πυρὸς καὶ ὕδατος ἀλέκτοις φοραῖς. κατασκήπτειν δ' ἑκατέραν ἐν μέρει φασὶν ἐν πάνυ μακραῖς ἐνιαυτῶν περιόδοις: and after further explaining how both kinds of devastation occur, and how the inhabitants of the mountains are swept away by the one, those of the valleys and plains by the other, he proceeds: κατὰ δὴ τοὺς λεχθέντας τρόπους δίχα μυρίων ἄλλων βραχυτέρων φθειρομένου τοῦ πλείστου μέρους ἀνθρώπων ἐπιλιπεῖν ἐξ ἀνάγκης καὶ τὰς τέχνας . . . ἐπειδὰν δὲ αἱ μὲν κοιναὶ νόσοι χαλάσωσιν, ἄρξηται δὲ ἀνηβᾶν καὶ βλαστάνειν τὸ γένος ἐκ τῶν μὴ προκαταληφθέντων τοῖς ἐπιβρίσασι δεινοῖς, ἄρχεσθαι καὶ τὰς τέχνας πάλιν συνίστασθαι, οὐ τὸ πρῶτον γενομένας, ἀλλὰ τῇ μειώσει τῶν ἐχόντων ὑποσπανισθείσας.

[5] Cf. on this *Phil.-histor. Abhandl. der Berl. Akademie*, 1878, pp. 105 sq.

plants.[1] Observations are there collected with the most unwearied diligence from all regions of the world accessible at that time. All the information attainable by the insufficient means and methods at the disposal of the investigator of the period, not only upon the form and parts, but also upon the development, the cultivation, the use, and the geographical distribution of a large number of plants,[2] is there set down. His statements are moreover in general so reliable, and where they rest on the testimony of others so cautious, that they give us the most favourable impression of his power of observation and critical skill. Neither ancient nor mediæval times have any botanical work of equal importance to compare with the writings of Theophrastus. The scientific explanation of the facts, however, was necessarily in the highest degree unsatisfactory, since neither botany nor science in general was as yet adequate to this task. Aristotle was able in his geological works to compensate in some degree for the like defect both by the general grandeur of his fundamental thoughts and in particular by a multitude of brilliant conjectures and startling observations; but Theophrastus cannot be compared with his Master in either of these respects.

[1] According to KIRCHNER, *Die Botan. Schrift d. Th.* (*Jahrb. f. Philol. Supplementb.* vii.) p. 497, he names 550 plants, and of these there are about 170 with regard to which we do not know whether they had been previously known. As, however, he omits several with regard to which it can be proved that they were known before his time, we cannot assume that he intended to enumerate all that were known to him.

[2] Cf. what BRANDIS, iii. 298 sqq., KIRCHNER, 499 sqq., have collected from the writings of Theophrastus on the sources and compass of his botanical knowledge.

The fundamental ideas of his botanical theory are taken from Aristotle.[1] Plants are living creatures.[2] Theophrastus does not make express mention of a soul in them; he regards their natural heat and moisture as the seat of their life,[3] finding in these also the chief ground of the individual peculiarities by which they are differentiated from one another.[4] But in order that they may germinate and grow, a suitable external environment is indispensable.[5] Their progress and perfection, their improvement or deterioration depend, therefore, in this respect, primarily upon the heat and

[1] KIRCHNER, *ibid.* 514 sqq. gives us a comparison of Theophrastus's botanical theory with Aristotle's so far as we know it.

[2] Ζῶντα, *Caus* i. 4, 5, v. 5, 2; 18, 2; ἔμβια, *ibid.* v. 4, 5; they have not ἔθη [ἤθη] and πράξεις, like the animals, but they have βίους, *Hist.* i. 1, 1.

[3] *Hist.* i. 2, 4: ἅπαν γὰρ φυτὸν ἔχει τινὰ ὑγρότητα καὶ θερμότητα σύμφυτον ὥσπερ καὶ ζῷον, ὧν ὑπολειπόντων γίνεται γῆρας καὶ φθίσις, τελείως δὲ ὑπολιπόντων θάνατος καὶ αὔανσις. Cf. 11, 3; *Caus.* i. 1, 3: for germination there is required ἔμβιος ὑγρότης and σύμφυτον θερμὸν as well as a certain proportion between them. *Hist.* i. 11, 1: the seed contains the σύμφυτον ὑγρὸν καὶ θερμὸν, and if these escape, it loses the power of germination. See further *Caus.* ii. 6, 1 sq. 8, 3, and other passages.

[4] Cf. *Caus.* i. 10, 5. *Ibid.* c. 21, 3: τὰς ἰδίας ἑκάστων φύσεις εἴτ' οὖν ὑγρότητι καὶ ξηρότητι καὶ πυκνότητι [WIMMER'S conjecture] καὶ μανότητι καὶ τοῖς τοιούτοις διαφερούσας εἴτε θερμότητι καὶ ψυχρότητι. The latter, however, he remarks, are difficult to measure: he accordingly exerts himself here and in c. 22 to discover marks by means of which we may recognise the degrees of temperature in a plant, an endeavour in which, as we might suppose, he meets with very little success.

[5] *Caus.* ii. 3, 4: ἀεὶ γὰρ δεῖ λόγον τινὰ ἔχειν τὴν κρᾶσιν τῆς φύσεως πρὸς τὸ περιέχον. 7, 1: τὸ συγγενὲς τῆς φύσεως ἕκαστον ἄγει πρὸς τὸν οἰκεῖον [τόπον] . . . οἷον ἡ θερμότης καὶ ἡ ψυχρότης καὶ ἡ ξηρότης καὶ ἡ ὑγρότης· ζητεῖ γὰρ τὰ πρόσφορα κατὰ τὴν κρᾶσιν. c. 9, 6: ἡ γὰρ ἐπιθυμία πᾶσι τοῦ συγγενοῦς. The statement of BRANDIS (iii. 319) that the efficacy of heat, &c., is conditioned also by the opposite is not to be found either in *Caus.* ii. 9, 9, or anywhere else in Theophrastus, although he states in another connection, *Hist.* v. 9, 7, that passive and active must be heterogeneous.

moisture of the air and the ground and on the effects of sun and rain.[1] The more harmonious the relation in which all these factors stand to one another and to the plant, the more favourable are they to its development,[2] which is therefore conditioned partly by outward influences and partly by the peculiar nature of the plant or the seed, in reference to the latter of which we must again distinguish between the active force and the passive susceptibility to impressions from without.[3] This physical explanation does not, of course, with Theophrastus any more than with Aristotle exclude the teleological, which he finds both in the peculiar perfection of the plant itself and in its usefulness for man, without, however, going deeper into this side of the question or developing it in relation to the rest of his botanical theory.[4]

The chief subjects discussed in the remaining portions of the two works upon plants are the parts, the origin and development, and the classification of plants.

In considering the first of these Theophrastus encounters the question whether annual growths such as leaves, blossoms, and fruit are to be regarded as parts of the plant or not. Without giving a definite answer to this question he inclines to the latter view,[5] and accordingly names as the essential external parts of the

[1] Cf. *Hist.* i. 7, 1; *Caus.* i. 21, 2 sqq. ii. 13, 5, iii. 4, 3; 22, 3, iv. 4, 9 sq. 13, and other passages. In the explanation of the phenomena themselves, Theophrastus indeed not unfrequently gets into difficulty, and rescues himself by assumptions such as that referred to *supra*, vol. ii. p. 378, n. 1, of the compression of internal heat by external cold.

[2] *Caus.* i. 10, 5; 6, 8, ii. 9, 13, iii. 4, 3, and *passim.*

[3] The δύναμις τοῦ ποιεῖν and τοῦ πάσχειν, *Caus.* iv. 1, 3.

[4] See *supra*, vol. ii. p. 369, n. 2.

[5] *Hist.* i. 1, 1–4.

plant[1] the root, stem (or stalk), branches and twigs.[2] He shows how plants are differentiated by the presence or absence, the character, the size, and the position of these parts,[3] remarking that there is nothing which is found in all plants as invariably as mouth and belly are in animals, and that in view of the infinite variety of botanical forms we must frequently be content with mere analogy.[4] As 'internal parts'[5] he names bark, wood, pith, and as the 'constituent parts' of these again, sap, fibres, veins and pulp.[6] From these, which are permanent, he distinguishes finally the yearly changing elements, which, indeed, in many cases are the whole plant.[7] Here, however, as not unfrequently elsewhere, he takes the tree as the basis of his investigation; it seems to stand with him for the perfect plant, just as humanity stands with Aristotle for the perfect animal and man for the perfect type of humanity.

In his treatment of the origin of plants, Theophrastus points out three distinct methods of propagating them, viz. from seed, from parts of other plants, and by spontaneous generation.[8] The most natural of these is

[1] τὰ ἔξω μόρια (*ibid.*), the ἀνομοιομερῆ (*ibid.* 12, cf. *supra*, vol. i. p. 517, n. 6, and vol. ii. p. 28, n. 1.

[2] ῥίζα, καυλὸς, ἀκρεμὼν, κλάδος . . . ἔστι δὲ ῥίζα μὲν δι' οὗ τὴν τροφὴν ἐπάγεται [it depends on this, *i.e.* on the δύναμις φυσική, not on the position in the ground, *Hist.* i. 6, 9] καυλὸς δὲ εἰς ὃ φέρεται. καυλὸν δὲ λέγω τὸ ὑπὲρ γῆς πεφυκὸς ἐφ' ἕν . . . ἀκρεμόνας δὲ τοὺς ἀπὸ τούτου σχιζομένους, οὓς ἔνιοι καλοῦσιν ὄζους. κλάδον δὲ τὸ βλάστημα τὸ ἐκ τούτων ἐφ' ἓν οἷον μάλιστα τὸ ἐπέτειον, *Hist.* i. 1, 9. Aristotle's view was not altogether identical; see *supra*, vol. ii. p. 35, n. 4.

[3] *Ibid.* 6 sqq.

[4] *Ibid.* 10 sqq.

[5] τὰ ἐντὸς, *ibid.*; τὰ ἐξ ὧν ταῦτα, ὁμοιομερῆ, *ibid.* 2, 1.

[6] *Hist.* i. 2, 1, 3. On the meaning of ἶς, φλὲψ, σὰρξ of plants, see MEYER, *Gesch. der Bot.* i. 160 sq.

[7] *Hist.* i. 2, 1 sq.

[8] Here he follows Aristotle; see *supra*, vol. ii. p. 36.

from seed. All seed-bearing plants employ this method, even if individuals among them exhibit another as well. This law, acccording to Theophrastus, is not only obvious from observation, but follows still more clearly from the consideration that otherwise the seed of such plants would serve no purpose, in a system of nature where nothing, least of all anything so essential as the seed, is purposeless.[1] Theophrastus compares seed, as Empedocles had done, to eggs,[2] but he has no true conception of the fructification and sexual differences of plants. He often distinguishes, indeed, between male and female plants,[3] differing in this from Aristotle;[4] but when we inquire what he means by this, we find, in the first place, that this distinction refers always to plants as a whole and not to the organs of fructification in them, and can apply, therefore, only to the smallest portion of the vegetable kingdom; that, in the second place, it is applied by Theophrastus only to trees, and not even to all these; and, thirdly, that even here it rests not upon any actual knowledge of the process of fructification, but upon vague analogies of popular language.[5]

[1] *Caus.* i. 1, 1 sq. 4, 1; *Hist.* ii. 1, 1, 3.

[2] *Caus.* i. 7, 1, cf. ZELLER, *Ph. d. Gr.* i. 717, 5. So also Aristotle, *Gen. An.* i. 23, 731, a, 4.

[3] See *supra*, vol. ii. p. 34, n. 1, and p. 48.

[4] See Index under ἄρρην and θῆλυς.

[5] It is clear from his whole mode of applying the distinction between male and female plants that Theophrastus was not the first to make it. It is plain that he found it already existing, and that it belongs in fact to the unscientific use of language. He nowhere gives a more exact definition of its significance or its basis; on the contrary, he frequently marks it as a customary division by the use of καλοῦσι or a similar expression (*e.g. Hist.* iii. 3, 7, 8, 1, 12, 6, 15, 3, 18, 5). The division in his text is limited to trees: trees, he says, are divided into male and female (*Hist.* i. 14, 5, iii. 8, 1; *Caus.* i. 22, 1, and *passim*); and nowhere does he

On the other hand, he instituted accurate observations upon the process of germination in some plants.[1] Among the different methods of propagating plants by slips, bulbs, &c., which Theophrastus minutely dis-

call any other plant but a tree male or female; for although he says (*Hist.* iv. 11, 4) of a species of reed that in comparison with others it is θῆλυς τῇ προσόψει, this is quite different from a division into a male and female species. Theophrastus speaks also (*Caus.* vi. 15, 4) of an ὀσμὴ θῆλυς. Even trees, however, do not all fall under the above division; cf. *Hist.* i. 8, 2: καὶ τὰ ἄρρενα δὲ τῶν θηλειῶν ὀζωδέστερα, ἐν οἷς ἐστιν ἄμφω. This is enough to show that the division is not based on any correct conceptions as to the fructification of plants, and all that he further states concerning it proves how little value must be set upon it. The distinction between male and female trees is found to consist in the former being barren, or at any rate less fruitful than the latter (*Hist.* iii. 8, 1). The most general distinction between trees is that of male and female, ὧν τὸ μὲν καρποφόρον τὸ δὲ ἄκαρπον ἐπὶ τινῶν. ἐν οἷς δὲ ἄμφω καρποφόρα, τὸ θῆλυ καλλικαρπότερον καὶ πολυκαρπότερον: some, however, contrariwise call the latter kind of trees male. *Caus.* ii. 10, 1: τὰ μὲν ἄκαρπα τὰ δὲ κάρπιμα τῶν ἀγρίων, ἃ δὴ θήλεα τὰ δ' ἄρρενα καλοῦσιν. Cf. *Hist.* iii. 3, 7, c. 9, 1, 2, 4, 6, c. 10, 4, c. 12, 6, c. 15, 3, c. 18, 5; *Caus.* i. 22, 1, iv. 4, 2). Moreover, it is remarked that the male have more branches (*Hist.* i. 8, 2), and that their wood is harder, of closer tissue, and darker, while the female are more slender (*Hist.* iii. 9, 3, v. 4, 1; *Caus.* i. 8, 4). Only of the date tree does Theophrastus say that the fruit of the female ripens and does not fall off if the pollen of the male fall upon it, and he compares this with the shedding of the spawn by the male fish; but even in this he cannot see fructification in the proper sense, as the fruit is supposed to be already there; his explanation of the matter rather is that the fruit is warmed and dried by the pollen, and he compares the process with the caprification of figs (*Caus.* ii. 9, 15, iii. 18, 1; *Hist.* ii. 8, 4, 6, 6). He never supposes that all seed-formation depends upon fructification. In *Caus.* iii. 18, 1, he expressly rejects the idea which might have been founded upon this fact: πρὸς τὸ τελειογονεῖν μὴ αὔταρκες εἶναι τὸ θῆλυ, remarking that if it were so there would be not only one or two examples of it, but it would necessarily establish itself in all, or at any rate in most, cases. It is not surprising, therefore, that he says (*Caus.* iv. 4, 10) that in the case of plants the earth bears the same relation to the seed as the mother does in the case of animals.

[1] *Hist.* viii. 2, on grain, pulse, and some trees.

cusses,[1] he reckons grafting and budding, in which he says the stem serves as soil for the bud or the graft;[2] and, as a second method of a similar kind, the annual sprouting of plants.[3] In reference, finally, to spontaneous generation, Theophrastus indeed remarks that this is not unfrequently merely apparent, the seeds of many plants being so minute as to escape observation, or having been carried by winds, water and birds to places where we least expect to find them.[4] But that it does actually take place, especially in the case of smaller plants, he does not doubt,[5] and he explains it, like the spontaneous generation of animals, as the result of the decomposition of certain materials under the influence of terrestrial and solar heat.[6]

In classifying plants, Theophrastus arranges them under the four heads of trees, bushes, shrubs and herbs,[7] calling attention at the same time to the unsatisfactoriness of this classification.[8] He further distinguishes

[1] *Hist.* ii. 1 sq. *Caus.* i. 1–4 and *passim.* Also propagation by the so-called tears (δάκρυα), on which see *Caus* i. 4, 6, *Hist.* ii. 2, 1, and cf. MEYER, *Gesch. der Bot.* i. 168.

[2] *Caus.* i. 6.

[3] *Caus.* i. 10, 1, where this subject is further discussed.

[4] *Caus.* i. 5, 2–4, ii. 17, 5; *Hist.* iii. 1, 5.

[5] Cf. *Caus.* i. 1, 2, 5, 1. ii. 9, 14, iv. 4, 10. *Hist.* iii. 1, 4.

[6] *Caus.* i. 5, 5; cf. ii. 9, 6, 17, 5.

[7] *Hist.* i. 3, 1, with the further explanation: *δένδρον μὲν οὖν ἐστι τὸ ἀπὸ ῥίζης μονοστέλεχες πολύκλαδον ὀζωτὸν οὐκ εὐαπόλυτον . . . θάμνος δὲ τὸ ἀπὸ ῥίζης πολύκλαδον . . . . φρύγανον δὲ τὸ ἀπὸ ῥίζης πολυστέλεχες καὶ πολύκλαδον . . . . πόα δὲ τὸ ἀπὸ ῥίζης φυλλοφόρον προϊὸν ἀστέλεχες οὗ ὁ καυλὸς σπερμοφόρος.*

[8] *Ibid.* 2: *δεῖ δὲ τοὺς ὅρους οὕτως ἀποδέχεσθαι καὶ λαμβάνειν ὡς τύπῳ καὶ ἐπὶ τὸ πᾶν λεγομένους· ἔνια γὰρ ἴσως ἐπαλλάττειν δόξειε, τὰ δὲ καὶ παρὰ τὴν ἀγωγὴν* [by culture] *ἀλλοιότερα γίνεσθαι καὶ ἐκβαίνειν τῆς φύσεως.* And after explaining by examples and further enlarging upon this fact, that there are also bushes and herbs with the form of trees, and that we might thus be inclined to lay more stress upon the size, strength and durability of plants,

between garden and wild plants, fruit-bearing and barren, blossoming and non-blossoming, evergreen and deciduous; while admitting that these also are vanishing distinctions, he yet regards them as the common natural characteristics of certain classes.[1] He lays special stress, however, on the division into land and water plants.[2] In his own treatment of plants he follows the first main division, except that he classes trees and bushes together.[3] Into the further contents of his botanical writings, however, we cannot here enter.[4]

Of Theophrastus's work upon Zoology[5] hardly anything remains to us; nor does the information which we possess from other sources as to his zoological doctrines justify us in attributing to him more in this field

he concludes again, § 5: διὰ δὴ ταῦτα ὥσπερ λέγομεν οὐκ ἀκριβολογητέον τῷ ὅρῳ ἀλλὰ τῷ τύπῳ ληπτέον τοὺς ἀφορισμούς.

[1] *Hist.* i. 3, 5 sq. and some further remarks c. 14, 3. In respect to the distinction between garden and wild plants especially he observes here and iii. 2, 1 sq. that this is a natural one, as some plants degenerate under cultivation, or at least do not improve; others, on the contrary (*Caus.* i. 16, 13), are designed for it.

[2] *Hist.* i. 4, 2 sq. 14, 3, iv, 6, 1; *Caus.* ii. 3, 5.

[3] Books ii.–v. of the *History of Plants* treat of trees and bushes, therefore of ligneous plants; book vi. of shrubs; books vii. viii. of herbs; book ix. discusses the sap and healing qualities of plants.

[4] BRANDIS, iii. 302 sqq., gives a review of the contents of both works; see also a shorter one in MEYER, *Gesch. der Bot.* i. 159 sqq.

[5] Seven books, which DIOG. v. 43 first enumerates singly by their particular titles, and then comprehends under the common title π. ζῴων. Single books are also cited by Athenæus among others; see USENER, p. 5, Theophrastus himself refers (*Caus. Pl.* ii. 17, 9, cf iv. 5, 7) to the ἱστορίαι περὶ ζῴων. He does not seem, however (if we may judge from the single titles in Diogenes), to have intended in this work to give a complete natural history, but only (as was his general plan where Aristotle had already laid down the essential principles) to supplement Aristotle's work by a minute treatment of particular points. To this work belong Fr. 171–190.

than an extension of Aristotle's labours by further observations and some isolated researches of minor value.[1]

His views upon the nature of life and of the human soul are of more importance.[2] Several of the funda-

[1] The citations from him relating to this, apart from isolated, and sometimes rather mythical, references to his natural history (*e.g.* Fr. 175 and the statement in PLUT. *Qu. conv.* vii. 2, 1), are limited to the following:—Animals occupy a higher stage than plants: they have not only life but also ἔθη [ἤθη] and πράξεις (*Hist.* i. 1, 1); they are related to man, not only in body, but also in soul (see *infra*, p. 394, n. 1). Their life proceeds in the first instance from a native, internal heat (Fr. 10 π. λειποψυχ. 2); at the same time they require a suitable (σύμμετρος) environment, air, food, &c. (*Caus. Pl.* ii. 3, 4 sq. iii. 17, 3); alterations of place and season produce in them certain changes (*Hist.* ii. 4, 4, *Caus.* ii. 13, 5, 16, 6). With Aristotle (see Chap. X. *supra*) Theophrastus emphasises the marks of design in their bodily organs as against the older physics: the physical organism is the instrument, not the cause of vital activity (*De Sensu*, 24). Here, however, Theophrastus does not, any more than Aristotle (see Ch. VII. *supra*), overlook the fact that even in the case of animals it is impossible to trace in every particular a definite design (Fr. 12, 29: see *supra*, vol. ii. p. 11, n. 2). A distinction is occasionally made between land- and water-animals (*Hist.* i. 4, 2, 14, 3. iv. 6, 1; *Caus.* ii. 3, 5); wild and tame (*Hist.* iii. 2, 2, *Caus.* i. 16, 13); on the latter distinction in *Hist.* i. 3, 6 he remarks that the measure of it is relation to man, ὁ γὰρ ἄνθρωπος ἢ μόνον ἢ μάλιστα ἥμερον. The use which the different animals are to one another Theophrastus had referred to in the *Natural History* (*Caus.* ii. 17; 9 cf. § 5). Concerning the origin of animals he also believes in spontaneous generation even in the case of eels, snakes and fish (*Caus.* i. 1, 2, 5, 5, ii. 9, 6, 17, 5; Fr. 171, 9, 11, 174, 1, 6; cf. PORPH. *De Abst.* ii. 5, according to which the first animals must have sprung from the earth, and the treatise π. τῶν αὐτομάτων ζῴων in DIOG. v. 46); their metamorphoses are mentioned in *Caus.* ii. 16, 7, iv. 5, 7. Respiration he conceives, with Aristotle, to serve the purpose of refrigeration: fish do not breathe, because the water performs this service for them (Fr. 171, 1, 3; cf. Fr. 10, 1). Lassitude is traced (Fr. 7, 1, 4, 6, 16) to a σύντηξις, a decomposition of certain constituents of the body (cf. the σύντηγμα, vol. ii. p. 51, n. 2, *sup.*); vertigo (Fr. 8, π. ἰλίγγων), to the irregular circulation of the humours in the head. Fr. 9, π. ἱδρώτων investigates the properties of perspiration and their conditions. Fainting is the result of the want or loss of vital heat in the respiratory organs (Fr. 10, π. λειποψυχίας); similarly palsy results from cold in the blood (Fr. 11, π. παραλύσεως).

[2] Theophr. had spoken of the soul in *Physics*, Bks. iv. and v., which according to THEMIST. *De*

mental conceptions of the Aristotelian doctrine are here called in question. Aristotle had described the soul as the unmoved principle of all movement, and had referred its apparent movements, in so far as they can properly be regarded as such, to the body.[1] Theophrastus held that this is true only of the lower activities of the soul: thought-activity, on the contrary, must, he thinks, be regarded as a movement of the soul.[2]

*An.* 91 a, Spengel ii. p. 199, 11, were also entitled 'π. ψυχῆς.'

[1] See *supra*, Ch. XI.

[2] According to SIMPL. *Phys.* 225, a, he said in the first book π. κινήσεως: ὅτι αἱ μὲν ὀρέξεις καὶ αἱ ἐπιθυμίαι καὶ ὀργαὶ σωματικαὶ κινήσεις εἰσὶ καὶ ἀπὸ τούτων ἀρχὴν ἔχουσιν, ὅσαι δὲ κρίσεις καὶ θεωρίαι, ταύτας οὐκ ἔστιν εἰς ἕτερον ἀγαγεῖν, ἀλλ' ἐν αὐτῇ τῇ ψυχῇ καὶ ἡ ἀρχὴ καὶ ἡ ἐνέργεια καὶ τὸ τέλος, εἰ δὲ δὴ καὶ ὁ νοῦς κρεῖττόν τι μέρος καὶ θειότερον. ἅτε δὴ ἔξωθεν ἐπεισιὼν καὶ παντέλειος. καὶ τούτοις ἐπάγει· ὑπὲρ μὲν οὖν τούτων σκεπτέον εἴ τινα χωρισμὸν ἔχει πρὸς τὸν ὅρον, ἐπεί τό γε κινήσεις εἶναι καὶ ταύτας ὁμολογούμενον. We know that Theophrastus also described music as κίνησις ψυχῆς. To him, also, RITTER, iii. 413, refers THEMIST. *De An.* 68 a, Sp. ii. p. 29 sq., where divers objections to Aristotle's criticism of the assumption that the soul moves, are cited from an unnamed writer who is described with the words ὁ τῶν 'Αριστοτέλους ἐξεταστής. THEMIST. 89 b. Sp. p. 189, 6, certainly says Θεόφραστος ἐν οἷς ἐξετάζει τὰ 'Αριστοτέλους: and Hermolaus Barbarus translates (according to Ritter) both passages *Theophrastus in iis libris in quibus tractat locos ab Aristotele ante tractatos.* But this very similarity makes it possible that Hermolaus merely transferred Theophrastus's name from the second passage to the first — a transference hardly justified by that passage itself. The statements of Themistius seem rather to refer to another, and indeed far later, writer than Theophrastus, *e.g.*, when he reproaches his anonymous opponent (68, a), with having apparently wholly forgotten Aristotle's views upon motion, καίτοι σύνοψιν ἐκδεδωκὼς τῶν περὶ κινήσεως εἰρημένων 'Αριστοτέλει (Theophrastus can hardly have written such a treatise —ἐκδεδωκὼς moreover points to an original work—nor was it necessary to appeal to this to prove that Aristotle's theory of motion might have been known to him); when he reports of him (68, b.): ὁμολογῶν τὴν κίνησιν τῆς ψυχῆς οὐσίαν εἶναι καὶ φύσιν, διὰ τοῦτό φησιν, ὅσῳ ἂν μᾶλλον κινῆται τοσούτῳ μᾶλλον τῆς οὐσίας αὐτῆς ἐξίστασθαι, &c. (this Theophrastus would certainly not have said); when he says to him with reference to this that he appears not to know the distinction of motion and energy. The general tone

Aristotle had spoken of a Passive Reason, declaring that only the capacity of knowledge is innate, and that this capacity can only develop gradually into actual knowledge;[1] but the development of that which is present at first only as a capacity—in other words, the realisation of possibility—is movement.[2] It is improbable that Theophrastus on this account defined the nature of the soul differently from Aristotle;[3] but on the other hand, he found serious difficulty in accepting his view of the relation between active and passive reason. The question, indeed, as to how reason can at once come from without and be innate, may be answered by assuming that it enters at the moment of birth. But a further difficulty arises: if it be true that reason is at first nothing actually, but everything only potentially, how does it accomplish that transition to actual thought and passion, which we must attribute to it in one sense or another, when it performs an act of thought? If it be said that it is impelled to think by external things, it is hard to understand how the incorporeal can be acted upon and altered by the corporeal. If it receives the impulse from itself—the only other alternative to im-

of Themistius's argument conveys the impression that he is dealing with a contemporary.

[1] See *supra*, vol. ii. p. 96.

[2] See *supra*, vol. ii. p. 380, n. 1.

[3] JAMBLICHUS says, indeed, in STOB. *Ecl.* i. 870: ἕτεροι δὲ [sc. τῶν Ἀριστοτελικῶν] τελειότητα αὐτὴν ἀφορίζονται κατ' οὐσίαν τοῦ θείου σώματος, ἣν [the τελειότης perhaps, not the θεῖον σῶμα] ἐντελέχειαν καλεῖ Ἀριστοτέλης, ὥσπερ δὴ ἐν ἐνίοις Θεόφραστος. But Aristotle had himself defined the soul as the entelechy of an organic body. Theophrastus, therefore, would have merely added that the first substratum of the soul, the θεῖον σῶμα, is the ether; which, however, he probably meant in the same sense in which Aristotle also (see *supra*, vol. ii. p. 6, n. 2) conceived of the soul as united to a substance like the ether.

pulse from the senses—then it is not passive at all. In any case this passivity must be of a different kind from passivity in general: it is not the mobilisation of that which has not yet reached completion, but it is a state of completion. If, moreover, matter is defined as that which exists only potentially, does not reason, conceived of as mere potentiality, become something material? If, finally, the distinction must be made in the case of reason, as elsewhere, between the efficient and the material cause, the question yet remains, how are we further to describe the nature of each? what are we to understand by the passive reason? and how is it that the active reason, if it is innate, does not act from the very first? if it is not innate, how does it afterwards originate?[1]

[1] Theophrastus in THEMIST. *De An.* 91 a, Sp. 198, 13 sq. (the same in a rather poor and corrupt extract in PRISCIAN'S paraphrase, ii. 4, p. 365 sq. Wimm.): ὁ δὲ νοῦς πῶς ποτε ἔξωθεν ὢν καὶ ὥσπερ ἐπίθετος, ὅμως συμφυής; καὶ τίς ἡ φύσις αὐτοῦ; τὸ μὲν γὰρ μηδὲν εἶναι κατ' ἐνέργειαν, δυνάμει δὲ πάντα, καλῶς, ὥσπερ καὶ ἡ αἴσθησις. οὐ γὰρ οὕτω ληπτέον, ὡς οὐδὲ αὐτός· ἐριστικὸν γάρ· ἀλλ' ὡς ὑποκειμένην τινὰ δύναμιν, καθάπερ καὶ ἐπὶ τῶν ὑλικῶν [the above statement, that it is nothing κατ' ἐνέργειαν, must not be taken to mean that it is never present itself: rather is its presence as faculty presupposed by every exercise of reason]. ἀλλὰ τὸ ἔξωθεν ἄρα οὐχ ὡς ἐπίθετον, ἀλλ' ὡς ἐν τῇ πρώτῃ γενέσει συμπεριλαμβάνον [-βανόμενον] θετέον. πῶς δέ ποτε γίνεται τὰ νοητά; [how does reason become the object of thought? how does it unite itself with it? Aristotle had said of divine as well as of human thought that in its exercise it is the object of thought; see *supra*, vol. i. p. 197, n. 3, and p. 199] καὶ τί τὸ πάσχειν αὐτόν; δεῖ γὰρ [sc. πάσχειν], εἴπερ εἰς ἐνέργειαν ἥξει, ὥσπερ ἡ αἴσθησις· ἀσωμάτῳ δὲ ὑπὸ σώματος τί τὸ πάθος; ἢ ποία μεταβολή; καὶ πότερον ἀπ' ἐκείνου ἡ ἀρχὴ ἢ ἀπ' αὐτοῦ; τὸ μὲν γὰρ [for on the one hand] πάσχειν ἀπ' ἐκείνου δόξειεν ἂν [sc. ὁ νοῦς] (οὐδὲν γὰρ ἀφ' ἑαυτοῦ [sc. πάσχει] τῶν ἐν πάθει), τὸ δὲ ἀρχὴν [l. ἀρχή, as PRISCIAN also has] πάντων εἶναι καὶ ἐπ' αὐτῷ τὸ νοεῖν καὶ μὴ ὥσπερ ταῖς αἰσθήσεσιν ἀπ' αὐτοῦ [thought must lie in its own power, and not come to it from the object as sensation to the senses—αὐτοῦ must be referred to ἐκείνου; BRENTANO'S changes, *Psychol. d. Ar.* 219, are unnecessary], τάχα δ' ἂν φανείη καὶ τοῦτο ἄτοπον, εἰ ὁ νοῦς ὕλης

That Theophrastus nevertheless held fast by the Aristotelian doctrine of the twofold nature of reason is beyond dispute;[1] what we know of the way in which he silenced his doubts shows merely that he took the various terms, as applied to reason, in a different sense from that which they bear in other fields, holding that

ἔχει φύσιν μηδὲν ὤν, ἅπαντα δὲ δυνατός. Themistius adds that Theophrastus continued these discussions in the fifth book of the *Physics*, and in the second on the Soul, and that they are μεστὰ πολλῶν μὲν ἀποριῶν, πολλῶν δὲ ἐπιστάσεων πολλῶν δὲ λύσεων. The result is, ὅτι καὶ περὶ τοῦ δυνάμει νοῦ σχεδὸν τὰ αὐτὰ διαποροῦσιν, εἴτε ἔξωθέν ἐστιν εἴτε συμφυής, καὶ διορίζειν πειρῶνται, πῶς μὲν ἔξωθεν πῶς δὲ συμφυής· λέγουσι δὲ καὶ αὐτὸν ἀπαθῆ καὶ χωριστὸν, ὥσπερ τὸν ποιητικὸν καὶ τὸν ἐνεργείᾳ· 'ἀπαθὴς' γάρ, φησιν, 'ὁ νοῦς, εἰ μὴ ἄρα ἄλλως παθητικός' [PRISCIAN also has these words, but he also quotes, as an introduction to them, the remark that we cannot suppose reason to be wholly impassive: 'εἰ γὰρ ὅλως ἀπαθής,' φησίν, οὐδὲν νοήσει]. καὶ ὅτι τὸ παθητικὸν ὑπ' [l. ἐπ'] αὐτοῦ οὐχ ὡς τὸ κινητικὸν ληπτέον, ἀτελὴς γὰρ ἡ κίνησις, ἀλλ' ὡς ἐνέργειαν. [So also PRISCIAN.] καὶ προϊών φησι [following Aristotle, see *sup.*, vol. ii. p. 61, n. 3] τὰς μὲν αἰσθήσεις οὐκ ἄνευ σώματος, τὸν δὲ νοῦν χωριστόν. (διὸ, here adds PRISCIAN, c. 9, p. 272 W., τῶν ἔξω προελθόντων [l. προσελθ.] οὐ δεῖται πρὸς τὴν τελείωσιν.) ἀψάμενος δὲ καὶ τῶν περὶ τοῦ ποιητικοῦ νοῦ διωρισμένων Ἀριστοτέλει, 'ἐκεῖνό, φησιν, ἐπισκεπτέον ὃ [perhaps ὅτι] δή φαμεν ἐν πάσῃ φύσει, τὸ μὲν ὡς ὕλην καὶ δυνάμει, τὸ δὲ αἴτιον καὶ ποιητικὸν, καὶ ὅτι ἀεὶ τιμιώτερον τὸ ποιοῦν τοῦ πάσχοντος καὶ ἡ ἀρχὴ τῆς ὕλης.' ταῦτα μὲν ἀποδέχεται, διαπορεῖ δὲ, τίνες οὖν αὗται αἱ δύο φύσεις, καὶ τί πάλιν τὸ ὑποκείμενον ἢ συνηρτημένον τῷ ποιητικῷ· μικτὸν γάρ πως ὁ νοῦς ἔκ τε τοῦ ποιητικοῦ καὶ τοῦ δυνάμει. εἰ μὲν οὖν σύμφυτος ὁ κινῶν, καὶ εὐθὺς ἐχρῆν καὶ ἀεὶ [sc. κινεῖν]. εἰ δὲ ὕστερον, μετὰ τίνος καὶ πῶς ἡ γένεσις; ἔοικεν οὖν καὶ ἀγέννητος, εἴπερ καὶ ἄφθαρτος. ἐνυπάρχων δ' οὖν, διὰ τί οὐκ ἀεί; ἢ διὰ τί λήθη καὶ ἀπάτη καὶ ψεῦδος; ἢ διὰ τὴν μίξιν; The last paragraph THEMISTIUS gives, 89 b, Sp., 189, 8, more literally, apparently, as follows: εἰ μὲν γὰρ ὡς ἕξις, φησὶν, ἡ δύναμις ἐκείνῳ [the νοῦς ποιητ.], εἰ μὲν σύμφυτος ἀεὶ, καὶ εὐθὺς ἐχρῆν· εἰ δ' ὕστερον &c. The development of the active reason from the potential is described also in the fragment in PRISCIAN, c. 10, which has its place here, as the acquisition of a ἕξις (in the sense discussed, vol. i. p. 285, n. 3, *supra*). For the text in the above, besides SPENGEL and BRANDIS, iii. 288 sq., TORSTRIK, *Arist. de An.* 187 sq. and BRENTANO, *ibid.* 216 sqq. may be consulted.

[1] Cf. previous note and *supra*, vol. ii. p. 391, n. 2.

its evolution has no relation to the incorporeal, which is always present to it, but only to the corporeal, of which it furnishes the explanation.[1]

In the views to which we have just referred, and especially in attributing motion to the activity of the soul, Theophrastus shows an unmistakeable inclination to identify the spiritual element in man more closely with the physical. Similarly a statement has come down to us in which he asserts that the soul of man is of the same nature as that of animals, that it exhibits the same activities and states, and is only distinguished

[1] Even the intimations in THEMISTIUS take this turn. The passivity and potentiality of the reason is taken to be of another kind than that of corporeal existence; as independent of the body it does not require external impressions in order to reach completeness as active, but is self-evolved from δύναμις to ἕξις; error and forgetfulness are explained by its union with the body. On similar lines is the Theophrastean defence of the Aristotelian doctrine which PRISCIAN gives us (see ii. 17, p. 277, W.): πάλιν δὲ ὑπομιμνήσκει φιλοσοφώτατα ὁ Θεόφρ. ὡς καὶ αὐτὸ τὸ εἶναι τὰ πράγματα τὸν νοῦν καὶ δυνάμει καὶ ἐνεργείᾳ ληπτέον οἰκείως· ἵνα μὴ ὡς ἐπὶ τῆς ὕλης κατὰ στέρησιν τὸ δυνάμει, ἢ κατὰ τὴν ἔξωθεν καὶ παθητικὴν τελείωσιν τὸ ἐνεργείᾳ ὑπονοήσωμεν· ἀλλὰ μηδὲ ὡς ἐπὶ τῆς αἰσθήσεως, ἔνθα διὰ τῆς τῶν αἰσθητηρίων κινήσεως ἡ τῶν λόγων γίνεται προβολή, καὶ αὕτη τῶν ἔξω κειμένων οὖσα θεωρητική, ἀλλὰ νοερῶς ἐπὶ νοῦ καὶ τὸ δυνάμει καὶ τὸ ἐνεργείᾳ εἶναι τὰ πράγματα ληπτέον . . . c. 20, p. 281, W.: τοῦτο δὲ [the previous citation from Aristotle] διαρθρῶν ὁ Θ. ἐπάγει· ἀλλ' ὅταν γένηται καὶ νοηθῇ, δῆλον ὅτι ταῦτα ἕξει, τὰ δὲ νοητὰ ἀεί, εἴπερ ἡ ἐπιστήμη ἡ θεωρητικὴ ταὐτὸ τοῖς πράγμασιν· αὕτη δὲ ἡ κατ' ἐνέργειαν δηλονότι, κυριωτάτη γάρ. [We must point in this way and take αὕτη . . . γὰρ as probably an explanation of Priscian.] τῷ νῷ, φησί, τὰ μὲν νοητά, τουτέστι τὰ ἄϋλα, ἀεὶ ὑπάρχει· ἐπειδὴ κατ' οὐσίαν αὐτοῖς σύνεστι καὶ ἔστι[ν] ὅπερ τὰ νοητά· τὰ δὲ ἔνυλα, ὅταν νοηθῇ, καὶ αὐτὰ τῷ νῷ ὑπάρξει, οὐχ ὡς συστοίχως αὐτῷ νοηθησόμενα· οὐδέποτε γὰρ τὰ ἔνυλα τῷ νῷ ἀΰλῳ ὄντι· ἀλλ' ὅταν ὁ νοῦς τὰ ἐν αὐτῷ μὴ ὡς αὐτὰ μόνον ἀλλὰ καὶ ὡς αἴτια τῶν ἐνύλων γινώσκῃ, τότε καὶ τῷ νῷ ὑπάρξει τὰ ἔνυλα κατὰ τὴν αἰτίαν. In making use of these passages it must not be forgotten that we have in them the words of Theophrastus only in the paraphrase of a Neoplatonic.

from it by a greater degree of perfection.[1] This, however, can only refer to the lower powers of the soul exclusive of reason.[2] The relation of the lower to the higher elements of the soul seems also to have offered insuperable difficulties to him; we know at least that in regard to the imagination he was in doubt whether it ought to be referred to the rational or the irrational part.[3] From what we know of his treatment of the doctrine of reason we may conjecture that he found this subject also full of difficulty.[4]

We have fuller details of Theophrastus's doctrine of

[1] PORPH. *De Abst.* iii. 25 (*apud* BERNAYS, *Theophr. über Frömmigk.* 97, 184; for the fragment there given belongs, as BERNAYS proves at p. 99, to this book and not to the π. ζῴων φρονήσεως): Θεόφραστος δὲ καὶ τοιούτῳ κέχρηται λόγῳ. τοὺς ἐκ τῶν αὐτῶν γεννηθέντας . . . . οἰκείους εἶναι φύσει φαμὲν ἀλλήλων. So also of people of the same race, even if they are not of the same descent: πάντας δὲ τοὺς ἀνθρώπους ἀλλήλοις φαμὲν οἰκείους τε καὶ συγγενεῖς εἶναι δυοῖν θάτερον, ἢ τῷ προγόνων εἶναι τῶν αὐτῶν, ἢ τῷ τροφῆς καὶ ἠθῶν καὶ ταὐτοῦ γένους κοινωνεῖν . . . . καὶ μὴν καὶ πᾶσι τοῖς ζώοις αἵ τε τῶν σωμάτων ἀρχαὶ πεφύκασιν αἱ αὐταὶ [*i.e.* seed, flesh, &c.]. πολὺ δὲ μᾶλλον τῷ τὰς ἐν αὐτοῖς ψυχὰς ἀδιαφόρους πεφυκέναι, λέγω δὴ ταῖς ἐπιθυμίαις καὶ ταῖς ὀργαῖς, ἔτι δὲ τοῖς λογισμοῖς, καὶ μάλιστα πάντων ταῖς αἰσθήσεσιν. ἀλλ' ὥσπερ τὰ σώματα, καὶ τὰς ψυχὰς οὕτω τὸ μὲν ἀπηκριβωμένας ἔχει τῶν ζῴων, τὰ δὲ ἧττον τοιαύτας, πᾶσί γε μὴν αὐτοῖς αἱ αὐταὶ πεφύκασιν ἀρχαί. δηλοῖ δὲ ἡ τῶν παθῶν οἰκειότης. The rest concerns Porphyry, not Theophrastus.

[2] The λογισμοί, which with the beasts are different in perfection, are not in any very different position from the 'analoga' of νοῦς and φρόνησις, ascribed to the beasts by Aristotle (*supra*, vol. ii. p. 27, n. 6, and p. 38, n. 2).

[3] SIMPL. *De An.* 80, a. As to the difference between phantasy and perception, see also PRISCIAN, c. 3, 6, 263, W.

[4] With this theory of the imagination was connected a question referred to by PRISCIAN (see PLOTIN. p. 565, ed. Didot, cf. BRANDIS, iii. 373). It is to be noted, however, that Priscian does not expressly name Theophrastus; and that the supposition that he is here referring to him is a conjecture of DÜBNER'S. The question is, why do we remember our dreams when we are awake, and forget our waking life in dreams? We do not get any clear answer from Priscian.

the senses.[1] Here, however, he adopts Aristotle's conclusions without important modification.[2] The views of previous philosophers upon the senses and the objects of sense-perception are accurately presented and tested from the point of view of the Peripatetic doctrine.[3] Theophrastus himself explains sensation, with Aristotle, as a change in the organs of sense by means of which they become assimilated, not in matter but in form, to the object of perception.[4] This effect proceeds from the object.[5] In order that it may be produced it is necessary that the latter should stand to the organ of sense in a certain harmonious relation, the nature of which accordingly here forms an important subject of discussion;[6] it may not, however, be sought for either in the homogeneity or the heterogeneity of the constituent parts of its terms alone.[7] The operation of

[1] We can only notice in passing another anthropological inquiry: namely, the discussion on Melancholy, which is to be found in the Aristotelian *Problems* (xxx. 1, pp. 953–955), the Theophrastean origin of which (*i.e.* from the book π. Μελαγχολίας mentioned by DIOG. v. 44), ROSE, *De Arist. libr. ord.* 191 has detected by means of the reference therein (954, a, 20) to the book on Fire (§ 35, 40). The diverse effects which it was customary to attribute to the μέλαινα χολὴ are explained, with the aid of an analogy drawn from the effects of wine, by the theory that the μέλαινα χολὴ was of its own nature cold, but was capable of taking on a high degree of heat, and that accordingly it produced according to the surrounding circumstances, sometimes a condition of cold and weariness, and sometimes a heating and exciting effect.

[2] For which see p. 58 sqq. of vol. ii. *supra.*

[3] In the *De Sensu,* as to which see vol. ii. p. 354, n. 3.

[4] PRISCIAN, i. 1, p. 232, W: λέγει μὲν οὖν καὶ αὐτὸς, κατὰ τὰ εἴδη καὶ τοὺς λόγους ἄνευ τῆς ὕλης γίνεσθαι τὴν ἐξομοίωσιν. The theory of an ἀποῤῥοὴ, *i.e.* an effluence from the object to the sense, is attacked in the *De Sensu,* 20, cf. *Caus. Pl.* vi. 5, 4. Compare the passages cited from Aristotle *supra,* vol. ii. p. 59 n. 2.

[5] PRISCIAN, i. 37, p. 254, W.

[6] *De Sensu,* 32, PRISC. i. 44, p. 258, W, *Caus. Pl.* vi. 2, 1, 5, 4.

[7] Both views are attacked by Theophrastus in the *De Sensu,*

the object upon the senses is always mediated, according to Theophrastus, by a third term.[1] In developing his own doctrine, as in criticising his predecessors, he doubtless discussed each of the senses separately, but only a meagre report has here come down to us.[2] Like Aristotle, he distinguished the *sensus communis* from the other senses, but did not wholly agree with that philosopher's view of the way in which the universal qualities of matter are perceived.[3] He defends the veracity of sensation against the attacks of Democritus.[4]

31; the first also *ibid.*, 19, and the second *apud* PRISC. i. 34, p. 252. Cf. *supra*, vol. i. p. 454 sq.

[1] Cf. *supra*, vol. i. p. 519 (on the διηχὲς and δίοσμον). PRISC. i. 16, 20, 30, 40, p. 241, 244, 250, 255; *Caus. Pl.* vi. 1, 1. Theophrastus here says, in agreement with Aristotle (*vide supra*, vol. ii. p. 64), that all sensations reach us through some medium, which is in the case of Touch our own flesh, and in the case of the other senses certain external substances: for Sight the transparent medium; for Hearing, the air; for Taste, water; for Smell, air and water together. He also considers that the immediate organs of sense-perception in the case of Sight, Hearing and Smell are formed out of water and air.

[2] Besides the passages already cited, we ought to mention here the observations (Fr. 4 *De Odor.* 4, *Caus. Pl.* vi. 5, 1 sq.; which follow Aristotle, as to whom see *supra*, vol. ii. p. 65, n. 3) that although Smell is in man the feeblest of the senses, yet he alone cares for a pleasant smell for its own sake, and that sensations of Hearing make the keenest impression on our emotions (PLUT. *De Audiendo*, 2, p. 38, a); and the account of eyes that send out fire (*apud* SIMPL. *De Cœlo*, Schol. 513, a, 28; with which the citations *supra*, vol. ii. p. 65, n. 1, should be compared); and the criticisms of the theory of Democritus (see ZELLER, *Ph. d. Gr.* i. p. 818) as to the existence of an image of any visible object in the air. Nevertheless THEOPHRASTUS himself said (*ap.* PRISCIAN, i. 33, p. 251, W) as to images in mirrors: τῆς μορφῆς ὥσπερ ἀποτύπωσιν ἐν τῷ ἀέρι γίνεσθαι.

[3] Aristotle had said (in the *De Anima*, iii. 1, 425, a, 16 sqq.) that size, form, &c. were perceived by means of motion; ἄτοπον δὲ ὁ Θεόφρ. [φησὶν], εἰ τὴν μορφὴν τῇ κινήσει (PRISC. i. 46, p. 259, W).

[4] In the *De Sensu*, 68 sq. (where, however, for the corrupt χυμοῦ in 68 we should read, not, with Schneider and Philippson, χυλοῦ, but rather θερμοῦ) he complains that Democritus treated weight, lightness, hardness and softness as things in themselves,

As a Peripatetic, Theophrastus of course asserted the freedom of the will.[1] In his treatise on voluntary action[2] he fully discussed this subject, and possibly took notice of the Stoic doctrine of determination that was just then rising into notice. But on this point, as on so many others in Aristotle's psychology which demanded further investigation, little is known of Theophrastus's contribution to science.

We have somewhat fuller information as to his ethical doctrines.[3] Here also he merely continued the

and yet considered cold, heat, sweetness &c., as merely relative qualities of things. He argues that if these qualities depend on the form of the atoms—*e.g.* if warmth is said to consist in roundness of atoms—then such qualities must be in some sense objective. If they are supposed not to be objective because they do not appear alike to all men, then the same conclusion should follow as to all other qualities of things. Even as to such qualities as sweetness and bitterness, people are deceived only as to a particular case, and not as to the nature of sweets and bitters. Properties so essential as heat and cold, must be something belonging to the bodies that have them. Cf. on this the references *supra*, vol. i. p. 209. EPICURUS defended the atomic view against THEOPHRASTUS (*ap.* PLUTARCH, *Adv. Col.* 7, 2, p 1110).

[1] STOB. *Ecl* i. 206: Θεόφρ. προσδιαιρεῖ (Mein. -αρθροῖ) ταῖς αἰτίαις τὴν προαίρεσιν. PSEUDO-PLUT. *V. Hom.* ii. 120, p. 1155.

[2] Π. ἑκουσίου α′, DIOG. v. 43.

[3] DIOG. v. 42 sq. (with which cf. the further information in USENER, *Anal. Theophr.* 4 sq.) attributes to Theophrastus the following ethical works: § 42. π. βίων three books (if this work really treated of the different pursuits in life, *e.g.* the βίος θεωρητικὸς, πρακτικὸς, ἀπολαυστικὸς, &c. [cf. *supra*, vol. ii. p. 140, n. 2], and was not merely biographical); § 43, ἐρωτικὸς α′ (ATHEN. xiii. 562, e. 467, b. 606, c), π. ἔρωτος α′ (STRABO, x. 4, 12, p. 478), π. εὐδαιμονίας (ATHEN. xii. 543, xiii. 567, a; BEKKER, *Anecd. Gr.* i. 104, 31; CIC. *Tusc.* v. 9, 24, cf. ÆLIAN. *V. H.* ix. 11); § 44, π. ἡδονῆς ὡς Ἀριστοτέλης α′, π. ἡδονῆς ἄλλο α′ (ATHEN. xii. 526, d, 511, c; *ibid.* vi. 273, c. viii. 347, e, where he adds, however, that this work was also attributed to Chamæleon); Καλλισθένης ἢ π. πένθους (ALEX. *De An.* fin., CIC. *Tusc.* v. 9, 25, iii. 10, 21); § 45, π. φιλίας 3 B. (HIERON. vi. 517, b, ed. Vallars.: GELL. *N. A.* i. 3, 10, viii. 6, and *infra*, p. 409 sq.), π. φιλοτιμίας 2 B. (CIC. *ad Att.* ii. 3 *ad fin.*); § 46, π. ψευδοῦς ἡδονῆς (OLYMPIODOR. *Phileb.* 269); § 47, π. εὐτυχίας: ἠθικῶν σχολῶν α′: ἠθικοὶ χαρακτῆρες (v. *infra*): π. κολακείας

work of Aristotle, his chief merit being the greater fullness with which he develops it in details. We can-

α′ (ATHEN. vi. 254, d): ὁμιλητικὸς α′: π. ὅρκου α′: π. πλούτου α′ (ASPAS. in *Eth.* N. 51, and CIC. *Off.* ii. 16, 56). προβλήματα πολιτικὰ ἠθικὰ φυσικὰ ἐρωτικὰ α′; § 50, π. εὐσεβείας (*Schol. in Aristoph. Av.* 1354; as to BERNAYS' view *vide supra* ii. p. 355, n. 2), π. παιδείας ἢ π. ἀρετῶν ἢ π. σωφροσύνης α′ (to this work the Fragm. *apud* STOB. *Floril.* iv. 216, No. 124, ed. Mein. might be referred). A work π. παθῶν not named by Diogenes is referred to by SIMPL. *Categ.* 69, δ. *Schol. in Ar.* 70, b, 3. Theophrastus, however, also wrote two larger ethical works, of which one may possibly be the ἠθικαὶ σχολαὶ of Diog., which must in that case have had more than *one* book. The two are referred to as 'Ηθικὰ and π. 'Ηθῶν. Out of 'Θεόφρ. ἐν τοῖς ἠθικοῖς,' PLUT. *Pericl.* 38 quotes a story about Pericles. ''Εν τοῖς π. ἠθῶν' Theophr. had, according to the Scholiast in CRAMER'S *Anecd. Paris.* i. 194, made mention of the avarice of Simonides, and according to ATHEN. xv. 673 e, a contemporary of this scholar named Adrantus wrote five books περὶ τῶν παρὰ Θεοφράστῳ ἐν τοῖς περὶ ἠθῶν καθ' ἱστορίαν καὶ λέξιν ζητουμένων, and a sixth book περὶ τῶν ἐν τοῖς 'Ηθικοῖς Νικομαχείοις 'Αριστοτέλους. We must assume from this that this ethical treatise of Theophrastus was on a more comprehensive scale than Aristotle's, since it gave occasion for so much more voluminous an historical commentary; and we also gather expressly that it, like the *Nicomachean Ethics*, comprised several books. In fact, EUSTRAT. in *Eth.* N. 61, b, tells us, obviously from a well-informed source, that the verse ἐν δὲ δικαιοσύνῃ, &c. (ARIST. *Eth.* v. 2, 1129, b, 29) was ascribed by Theophrastus in the first book π. 'Ηθῶν to Theognis, and in the first book of the 'Ηθικὰ to Phocylides. From one of these works, or perhaps from both, the sketches of various faults which are collected in the *Characters* as we have it appear to have been borrowed. That this, as it stands, is an authentic work of Theophrastus is incredible; and that a genuine treatise on Characters by him underlies it, as BRANDIS, iii. 360, thinks possible, is in fact very unlikely. The origin of the collection above suggested explains, on the one hand, the fact that it does not form a connected whole, and, on the other, the fact that it exists in several different recensions, as to which cf. PETERSEN, *Theoph. Characteres*, p. 56 sqq., SAUPPE, *Philodemi De vitiis*, I. x. (Weimar, 1853), p. 8. SPENGEL, *Abhandl. der Münchener Akad. Phil.*, *Philos. Kleinschriften*, iii. 495, and PETERSEN, *Theoph. Characteres*, p. 66, have also suggested that this Theophrastian treatise has been used for the statement of the ethical teaching of the Peripatetics in STOBAEUS, *Ecl.* ii. 242–334, HERREN having already connected a part of the account (*v.* his remarks on p. 254) with THEOPHR.'s book π. εὐτυχίας. In any case, the sources from which

not, however, fail here to observe a certain deviation from Aristotle's point of view, consisting not so much in new or different conclusions as in a slightly altered estimate of the relative importance of the different elements which it is the problem of ethics to combine. Aristotle had not overlooked the significance of external goods and circumstances for the moral life of man, but he regarded these only as aids and instruments of moral activity, and insisted on their subordination to practical virtue. In Theophrastus, on the other hand, we find springing from his desire to escape from all disturbances a tendency to attach greater importance to outward circumstances. With that preference for theoretic activity which is so deeply rooted in the Aristotelian system, there is united in Theophrastus the demand of the student to be permitted to devote himself without hindrance to his work as well as that limitation to private life which was the outcome of the altered conditions of the time. As a consequence of this his moral tone lacks some of the rigor and force which, in spite of his cautious regard for the external conditions of action, are so unmistakable in Aristotle. The objections, however, which were urged against him, especially by his Stoic opponents, on this ground, are manifestly exaggerated; the difference between him and Aristotle is an insignificant one of emphasis, not a fundamental one of principle.

STOBÆUS drew must have been of a much later date (cf. ZELLER, *Ph. d. Gr.* iii. a, 546 sq.) and we cannot use his statement as evidence concerning the teaching of Theophrastus himself, except in the one passage (at p. 300) where he is named. As to this, cf. BRANDIS, p. 358–9.

The character here attributed to the ethical views of Theophrastus shows itself especially in his account of happiness, which he holds to be the goal of philosophy as of human activity in general.[1] While he agrees with Aristotle in holding that virtue is absolutely desirable, and regards it, if not alone, at least in a special sense as good,[2] he yet was unable to admit that outward conditions are indifferent. He denied that virtue alone was sufficient for happiness, or that the latter could exist together with extreme forms of physical suffering.[3] He complained of the disturbances to which our

[1] Cic. *Fin.* v. 29, 86: 'omnis auctoritas philosophiæ, ut ait Theophrastus, consistit in vita beata comparanda. beate enim vivendi cupiditate incensi omnes sumus'—assuming that the words 'ut ait Th.' are to be transposed to this place, as appears probable.

[2] Cicero, *Legg.* i. 13, 37–8, counts Theophrastus and Aristotle among those 'qui omnia recta et honesta per se expetenda duxerunt, et aut nihil omnino in bonis numerandum, nisi quod per se ipsum laudabile esset, aut certe nullum habendum magnum bonum, nisi quod vere laudari sua sponte posset.' To Theophrastus, however, we ought to ascribe only the latter of these opinions, and this the more confidently because it is probable from the context that Cicero is here, as elsewhere, following Antiochus, whose eclectic point of view led him to minimise the differences between the ethics of the Stoics and of the Peripatetics, just as much as the Stoics, on their side, were accustomed to exaggerate the distinction. In *Tusc.* v. 9, 24, Cicero himself tells us that Theophrastus admitted *three* kinds of Goods—as did Aristotle (*supra*, vol. ii. p. 151, n. 1), Plato and the Academics (see Zeller, *Ph. d. Gr.* i. 808, n. 3, and 879, n. 2).

[3] Cic. *Tusc.* v. 8, 24: 'Theophr. . . . cum statuisset, verbera, tormenta, cruciatus, patriæ eversiones, exilia, orbitates magnam vim habere ad male misereque vivendum [so said Aristotle also: *v. supra*, vol. ii. pp. 145, 150, nn. 1, 2], non est ausus elate et ample loqui, cum humiliter demisseque sentiret . . . vexatur autem ab omnibus [by the Stoics and, above all, the Academics] . . . quod multa disputarit, quamobrem is qui torqueatur, qui crucietur, beatus esse non possit.' Cf. *Fin.* v. 26, 77, 28, 85. It is no doubt the same part of the teaching to which Cicero, in *Acad.* ii. 43, 134, alludes when he remarks that Zeno had expected of virtue more than human nature admitted, 'Theophrasto multa diserte copio-

intellectual life is subjected from the body;[1] of the shortness of human life, which ceases just when we have arrived at some degree of insight;[2] and of the dependence of man upon circumstances which lie beyond his own control.[3] It was not indeed his intention to depreciate in this way the worth of virtue, or to seek the essence of happiness in accidental advantages and states,[4] but he certainly seems to attribute to outward relations greater importance than his master had done. The explanation of this trait must be sought, however, in his predilection for the peace and quiet of the life of study. He is not accused of attributing to external goods as such any positive value.[5] Even his

seque [contra] dicente'; and also when he complains, in *Acad.* i. 9, 33, that 'Theophr. . . . spoliavit virtutem suo decore imbecillamque reddidit, quod negavit in ea sola positum esse beate vivere'; cf. *Fin.* v. 5, 12: 'Theophrastum tamen adhibeamus ad pleraque, dummodo plus in virtute teneamus, quam ille tenuit, firmitatis et roboris.'

[1] *Apud* PLUT. *De Sanit. tu.* 24, p. 135, e. In PORPH. *De Abstin.* iv. 20, p. 373 we have the saying: πολὺ τῷ σώματι τελεῖν ἐνοίκιον τὴν ψυχήν: that is, as it is explained in the Plutarch Fragment i. 2, 2, p. 696, the λύπαι, φόβοι, ἐπιθυμίαι, ζηλοτυπίαι.

[2] *Vide supra*, vol. ii. p. 351, n. 2.

[3] CIC. *Tusc.* v. 9, 25: 'Vexatur idem Theophrastus et libris et scholis omnium philosophorum, quod in Callisthene suo laudavit illam sententiam: vitam regit fortuna, non sapientia.' Cf. PLUT. *Cons. ad Apoll.* 6, p. 104, d.

[4] Cf. *supra* vol. ii p. 402, n. 1. The story about Pericles in PLUT. *Pericles*, 38, can only be intended to lead up to a *negative* answer to the question which is there proposed by Theophrastus, εἰ πρὸς τὰς τύχας τρέπεται τὰ ἤθη καὶ κινούμενα τοῖς τῶν σωμάτων πάθεσιν ἐξίσταται τῆς ἀρετῆς. As to the words cited from Callisthenes, they are (as CICERO himself remarked and indicated by his metrical translation) a phrase of some other writer, probably a tragic or comic poet, which Theophrastus quoted; and, besides, it would be necessary, before we could draw a safe inference from them, that we should know the context in which Theophrastus introduced them. An isolated excerpt such as this in an attack by an opponent is not a safe basis for a conclusion as to Theophrastus's real teaching.

[5] He is blamed merely because he holds that sorrows and misfortune are a *hindrance* to

statements about pleasure closely accord with the Aristotelian teaching.[1] But that preference for the scientific life which he shared with Aristotle[2] was in his case not free from one-sidedness, and he held himself aloof from all that might in any degree disturb him in the practice of it. We see this especially in the fragment of his work upon Marriage;[3] from which he dissuaded the philosopher, both on the ground that the care of a house and family withdrew him from his work, and that he especially must be self-sufficient and

happiness; but this is genuine Aristotelian teaching: *v. sup.* vol. ii. p. 402, n. 3. But, on the other hand, he required (*ap.* STOB. *Floril.* iv. 283, No. 202, Mein.), that men should by simplicity of life make themselves independent of external things; he desired, *ap.* PLUT. *Lyc.* 10 (see PORPH. *De Abst.* iv. 4, p. 304), *Cup. Div.* 8, p. 527, to see man become by a proper use of wealth ἄπλουτος καὶ ἄζηλος; and he finds (*ap.* CIC. *Off.* ii. 16, 56) the chief value of riches in the fact that they serve for 'magnificentia et apparatio popularium munerum.'

[1] In the passage given by ASPASIUS (*Class. Journal*, xxix. 115; cf. BRANDIS, iii. 381) THEOPH. says, as Aristotle also might have said, that it is not the desire of a pleasure which is blameworthy, but the passionateness of the desire and the want of self-control. According to OLYMPIODORUS (in *Phileb.* 269, Stallb., he maintained against Plato, μὴ εἶναι ἀληθῆ καὶ ψευδῆ ἡδονήν, ἀλλὰ πάσας ἀληθεῖς. By this, however, he cannot have meant to deny the differences in quality between different sorts of pleasure, which the Peripatetic school always admitted. He meant merely, as is clear from the fuller explanation given by OLYMPIODORUS, that the ascription of 'truth' and 'falsehood' to pleasure is inappropriate, because every pleasure is for the man who feels it a *true* pleasure, and the predicate 'false' is therefore never suitable. If the words ἢ ῥητέον &c. which follow still refer to THEOPH., it seems that he even admitted the use of the words 'true' and 'false' in this connection, if only they were properly explained.

[2] CIC. *Fin.* v 4, 11, says of both, 'vitæ autem degendæ ratio maxume quidem illis placuit quieta, in contemplatione et cognitione posita rerum,' &c. *Ib.* 25, 73, and *Ad Att.* ii. 16, we are told that Dicæarchus gave the preference to the practical life, and Theophrastus to the theoretical.

[3] HIERON. *Adv. Jovin.* i. 47, iv. 6, 189, Mart. Vide *Theophrasti Opp.* (ed. Schneid.) v. 221 sqq.

able to dispense with family life.[1] It is quite consistent with this attitude of thought that Theophrastus should shun, as a hindrance to perfect happiness, such external fatalities and sufferings as threaten freedom and peace of mind. His nature was not adapted for the battle with the world and with the ills of life. The time and strength which this would demand would be withdrawn from the scientific labours which were his only happiness; it would interrupt quiet contemplation and the intellectual peace that accompanied it. Therefore he avoided everything which might involve him in such a conflict. Both the Stoic and the Epicurean school at this time aimed at making the wise man independent and self-sufficient. Theophrastus pursued the same end, except that, true to the spirit of the Peripatetic

[1] Theophrastus in this passage is answering the question, Whether the wise man would take a wife? He begins by saying that he would, 'si pulchra esset, si bene morata, si honestis parentibus, si ipse sanus ac dives.' But he promptly goes on to say that all these conditions are seldom combined, and therefore it is more prudent to avoid matrimony. 'Primum enim impediri studia philosophiæ, nec posse quemquam libris et uxori pariter inservire.' The best possible teacher might be to be found abroad, but one could not go to seek him if one was tied to a wife. Again, a wife has no end of costly wants. She fills her husband's ears, as Theophrastus explains in lively mimicry, with hundreds of complaints and reproaches, night and day. A poor woman is costly to keep: a rich one is unendurable. A man does not discover his wife's faults until after marriage. Her demands, her jealousies, her insistences on what is due to her and her family are endless. A beautiful wife is hardly to be kept faithful; yet a wife without beauty is a burden, &c., &c. It is wiser to leave one's housekeeping to a faithful servant, and to trust to one's friends in case of sickness. As for company, a man needs no wife: the wise man is never alone, for he has the wise men of all ages for his companions; and if men fail him he can speak with God. Nor should one set store by children, for they often bring one rather trouble and expense than joy or help. For heirs, a man does better to choose his friends.

ethics, he refused to overlook the external conditions of the self-sufficient life.[1]

As in the points hitherto discussed the difference discernible between Theophrastus and Aristotle is one of degree only, which does not admit of being strictly defined, so also in the remaining portions of his moral philosophy which are known to us it is but seldom that any important divergence of view is visible. Theophrastus, like Aristotle, defined virtue as the preservation of the true mean according to reason between two vices, or, more accurately, as the quality of the will directed to this end, under the guidance of insight.[2]

[1] We should not, however, be justified in referring to Theophrastus the line of argument set out in CIC. *Fin.* v. 6, 17, 9, 24 sqq. and STOB. *Ecl.* ii. 246 sqq., in which the Stoic dogma of the life according to nature is brought into relation with the Peripatetic theory of the different kinds of Good; for Cicero's account is derived, according to c. 3, 8, 25, 75, 27, 81 from Antiochus, and that in Stobæus (ZELLER, *Ph. d. Gr.* iii. a, 546 sq. 2nd ed.) from Arius Didymus, and the later Eclecticism has manifestly coloured both of these sources

[2] STOB. *Ecl.* ii. 300: *τὸ οὖν πρὸς ἡμᾶς μέσον ἄριστον, οἷον, φησὶν ὁ Θεόφραστος. ἐν ταῖς ἐντυχίαις ὁδὶ μὲν πολλὰ διελθὼν καὶ μακρῶς ἀδολεσχήσας, ὁδὶ δ' ὀλίγα καὶ* [which GAISF. unnecessarily deletes] *οὐδὲ τἀναγκαῖα οὗτος δὲ αὐτὰ ἃ ἔδει μὴ τὸν καιρὸν ἔλαβεν. αὕτη μεσότης πρὸς ἡμᾶς, αὕτη γὰρ ὑφ' ἡμῶν ὥρισται τῷ λόγῳ. δι' ὃ ἔστιν ἡ ἀρετὴ ἕξις προαιρετική, ἐν μεσότητι οὖσα τῇ πρὸς ἡμᾶς, ὡρισμένη λόγῳ, καὶ ὡς ἂν ὁ φρόνιμος ὁρίσειεν* [this is word for word the Aristotelian definition; *supra*, vol. ii. p. 163, n. 2]. *εἶτα παραθέμενος τινὰς συζυγίας, ἀκολούθως τῷ ὑφηγητῇ* (ARIST. *Eth. N.* ii. 7) *σκοπεῖν ἔπειτα καθ' ἕκαστον ἐπάγων ἐπειράθη τὸν τρόπον τοῦτον* [perhaps we should read *σκοπεῖν ἐπειράθη κ. ἕκ. ἐπάγων τ. τρ. τ.*]· *ἐλήφθησαν δὲ παραδειγμάτων χάριν αἵδε· σωφροσύνη, ἀκολασία, ἀναισθησία· πρᾳότης, ὀργιλότης, ἀναλγησία· ἀνδρεία, θρασύτης, δειλία· δικαιοσύνη· ἐλευθεριότης, ἀσωτία, ἀνελευθερία· μεγαλοπρέπεια, μικροπρέπεια, σαλακωνία.* After an explanation on these lines of the nature of the virtues named, he adds, at p. 306: *τοῦτο μὲν τὸ τῶν ἠθικῶν ἀρετῶν εἶδος παθητικὸν καὶ κατὰ μεσότητα θεωρούμενον, ὃ δὴ καὶ τὴν ἀντακολουθίαν ἔχει* [add *τῇ φρονήσει*], *πλὴν οὐχ ὁμοίως, ἀλλ' ἡ μὲν φρόνησις ταῖς ἠθικαῖς κατὰ τὸ ἴδιον, αὗται δ' ἐκείνῃ κατὰ συμβεβηκός. ὅτι* [read *ὁ*] *μὲν γὰρ δίκαιος ἐστὶ καὶ φρόνιμος, ὁ γὰρ τοιόσδε αὐτὸν λόγος εἰδοποιεῖ, οὐ*

In the description of the different virtues and their opposite vices we cannot doubt that he went into greater detail than his master,[1] although we can follow his work here only in respect of some of the vices under the uncertain guidance of the *Characters*. He did not, however, conceal from himself that the distinction between the separate virtues is to a certain degree a vanishing one, inasmuch as they all find in moral insight a common root and connecting principle.[2] That

μὴν ὅτι [ὁ] φρόνιμος καὶ δίκαιος κατὰ τὸ ἴδιον, ἀλλ' ὅτι τῶν καλῶν κἀγαθῶν κοινῶς πρακτικὸς φαύλου δ' οὐδενός (*i.e.* φρόνησις is contained in the idea of justice *immediately*, since justice is the adjustment of relations concerning rights according to φρόνησις; but justice is contained in the idea of φρόνησις only *mediately*).—Down to this point the extract seems to come from THEOPHRASTUS, because there is an unbroken grammatical connection from the words εἶτα παραθέμενος, &c., which can only refer to him. The reading ἐν ταῖς ἐντυχίαις in the second line of the passage is rightly supported by PETERSEN, *Theophr. Characteres*, 67 sq., against HEEREN'S conjecture, ἐν τοῖς περὶ εὐτυχίας. PETERSEN, however, himself distorts THEOPHRASTUS'S meaning (which in this evidently incomplete excerpt is not very clearly expressed) when he reads καὶ μὴν τὸν καιρὸν ἔλαβεν, in place of μὴ τ. κ. ἔλ. For the words οὗτος . . . ἔλαβεν indicate, not the correct course, but a third kind of error, that, namely, in which what is done may be right in itself but not right in relation to the particular circumstances of the persons acting: where, that is to say, the μεσότης πρὸς τὸ πρᾶγμα is observed, but not the μεσότης πρὸς ἡμᾶς (cf. *supra*, vol. ii. p. 162, n. 3).

[1] This cannot be said to be proved with any certainty (as has been already pointed out), from what we find in STOB. *Ecl.* ii. 316 sqq., and CIC. *Fin.* v. 23, 65. It is, however, probable in itself, arguing on the analogy of the general lines of Theophrastus's work, and it is made still more probable when we remember the detailed description of a series of failings which we have in the *Characters*. We are told by HERMIPPUS (*ap.* ATHEN. i. 21, a: cf. *supra*, vol. ii. p. 352, n. 1), probably with some exaggeration (as BRANDIS, p. 359, justly remarks), that Theophrastus in his lectures carried even a mimicry of outward characteristics to great lengths. His tendency to and talent in such pictures of detail is obvious from the *Fragm.* just described at p. 405, n. 1, *supra*. The notice of Adrantus (*supra*, p. 400) is probably one of numerous examples introduced by him to illustrate his *Ethics*.

[2] ALEX. APHR. *De An.* 155,

one who so preferred scientific to practical activity distinguished dianoëtic from moral virtue cannot be doubted; nor could he easily avoid touching upon it in his *Ethics*; but whether he here discussed it at length it is impossible to tell.[1] Nor have we fuller information as to his treatment of the passions.[2] We are only informed that he maintained, seemingly against Zeno, the naturalness and inevitableness of certain emotions, such as anger against wrong-doing and under excitement.[3] For the rest he demands that no one should act under the influence of passion—for instance, that no one should inflict punishment in anger.[4] Of the sins

b: πᾶσαι ἂν ἔποιντο αἱ ἀρεταὶ τῇ φρονήσει. οὐδὲ γὰρ ῥᾴδιον τῶν ἀρετῶν κατὰ τὸν Θεόφραστον τὰς διαφορὰς οὕτω λαβεῖν, ὡς μὴ κατά τι κοινωνεῖν αὐτὰς ἀλλήλαις. γίνονται δ' αὐταῖς αἱ προσηγορίαι κατὰ τὸ πλεῖστον. Cf. the end of the passage from STOBÆUS quoted in the preceding note. *Ibid.* p. 270: φρόνησις decides, both for itself and for all other virtues, what is and what is not to be done, τῶν δ' ἄλλων ἑκάστην ἀποτέμνεσθαι μόνα τὰ καθ' ἑαυτήν.

[1] That he did not, PETERSEN, *ib.* 66, concludes (with SPENGEL, *Abhandl. der München. Akad. philol.-philos. Kleinschriften*, iii. 495) from the absence of the Dianoëtic Virtues in the *Magna Moralia*. It is, however, to be observed, on the one hand (as BRANDIS, ii. 6, 1566, iii. 361, suggests), that these virtues are not in fact unknown to that book, and, on the other hand, that it is impossible to prove that the book here follows Theophrastus. In STOBÆUS, *Ecl.* ii. 316, we find the ἕξις θεωρητική, to which belong σοφία, ἐπιστήμη, and φρόνησις, distinguished from the ἕξις πρακτική. Since, however, Aristotle himself (see *supra*, vol. ii. p. 178, n. 1) only discussed the theoretic activities in his *Ethics* so far as was necessary for the complete explanation of the ethical aspect of life, we cannot assume that Theophr. treated the subject in any other way.

[2] SIMPL. *Schol. in Ar.* 70, b, 3, citing the π. παθῶν (*d. q. v. supra*, vol. ii. p. 399), tells us that THEOPHR. distinguished the notions of μῆνις, ὀργὴ and θυμὸς by the formula of μᾶλλον καὶ ἧττον.

[3] SENECA, *De Ira*, i. 14, 1, 12, 1, 3; BARLAAM, *Eth. sec. Sto.* ii. 13 (*Bibl. Max. patr.* xxvi. 37 D, and *apud* BRANDIS, iii. 356). Against the Stoics were doubtless also directed the arguments mentioned by SIMPL. *Categ.* Schol. 86, b, 28, as to the mutability of the virtues.

[4] STOB. *Floril.* 19, 12.

of passion he declared those of desire to be worse than anger, since it is worse to succumb to pleasure than to pain.[1]

Theophrastus, like Aristotle, had devoted special attention to the moral relations which rest upon community of life. We know of special treatises written by him upon Friendship, Love, and Marriage.[2] He set the highest value upon Friendship—provided it is of the right kind, which, however, is not often the case.[3] He even went so far as to permit slight violations of duty if the interests of a friend could thereby be greatly furthered, holding that in this case the qualitatively higher worth of moral virtue was outweighed by the quantitative preponderance of the counterbalancing advantage to a friend, just as the value of a little piece of gold might be exceeded by a large quantity of copper.[4] All the more necessary must prudence in the selection of friends have appeared to him.[5] The three

[1] M. AUREL. πρ. ἑαυτ. ii. 10, Schol. *apud* CRAMER, *Anecd. Paris.* i. 174. So also Aristotle: *v. supra*, vol. ii. p. 190, n. 1 and p. 113, n. 1.

[2] *Supra*, vol. ii. p. 399, n. 2. Theophrastus's three books on Friendship were extensively used by CICERO for his *De Amicitia*: cf. GELL. *N. A.* i. 3, 11.

[3] HIERON. *in Micham*, iii. 1548, Mart.: 'scripsit Theophrastus tria de amicitia volumina, omni eam praeferens charitati, et tamen raram in rebus humanis esse contestatus est.' Cf. the remark quoted *supra*, vol. ii. p. 405, n. 1, that to be cared for by a friend is better than to be tended by a wife.

[4] See GELL. *N. A.* i. 3, § 10, 21–28, who gives partly the Greek text, partly a translation and summary. CICERO (*Amic.* 11 sqq. 17, 61) passes, as Gellius rightly complains, much too lightly over this point. He declaims passionately against the view, which nobody set up, that a man should commit treason or other gross crimes to oblige a friend; but at the end he concedes in two words, that if a friend's interests are very deeply involved, 'declinandum sit de via, modo ne summa turpitudo sequatur.' BRANDIS (iii. 353) sees in this a criticism of the teaching of Theophrastus; but this does not seem to be necessary.

[5] PLUT. *Frat. Am.* 8, p. 482,

kinds of friendship which Aristotle had distinguished he also recognises,[1] and doubtless in his treatise upon them made many fine observations upon the peculiarities of each of them and the divers relations in which friendship involves us.[2] He has much less sympathy with the more passionate affection of the lover: to him this is an irrational desire which overpowers the soul, and, like wine, may only be enjoyed in moderation.[3] This, however, is not the ground of his own disinclination to marriage;[4] upon which, notwithstanding, as upon the education and the conduct of women,[5] he may be credited with having said much that is true.[6]

Of Theophrastus's political writings we know, apart

b (STOB. *Floril.* 84, 14; SENECA, *Ep.* i. 3, 2; see Schneider, v. 289): we must try friends, before we love them: with our family, the converse is true.

[1] EUSTRAT. *in Eth. N.* 141, a (BRANDIS, iii. 352, by a slip refers it to Aspasius); Theophrastus and Eudemus held that friendships of persons in unequal relation were divisible into the same three classes as friendships of equality. Cf. *Eth. Eud.* vii. 4 *init.*, and see *supra*, vol. ii. p. 196, n. 3.

[2] Examples are the citations given in GELLIUS, viii. 6: 'In reconciliations with friends explanations are dangerous:' PLUT. *Frat. Am.* 20, p. 490: 'If friends have everything in common, it must especially be true that they have their respective friends in common:' PLUT. *Cato Min.* c. 37; 'Excessive friendship easily passes over into hate.' STOB. *Floril.* 3, 50 *ad fin.*: 'It is better δανείσαντα φρονίμως ἀπολαβεῖν φιλικῶς, ἢ συναλλάξαντα φιλανθρώπως κομίσασθαι φιλαπεχθημόνως.' Further interesting fragments of this work of THEOPHR. will be found in HEYLBUT, *De Theophr. Libr. π. φιλίας*, 13 sqq.

[3] STOB. *Floril.* 64, 27, 29; ATHEN. xiii. 562, e.

[4] *Supra*, vol. ii. p. 405, n. 1.

[5] See STOB. *Floril.* 74, 42: a woman should neither wish to see nor to be seen; *ibid.* 85, 7: not politics but housekeeping is her sphere; *ibid.* vol. iv. 193; No. 31 Mein.: education in γράμματα is necessary for girls also, but it should not be carried beyond what is needful for housekeeping.

[6] In the passage cited in STOB. *Floril.* 3, 50, he insists on sympathy and friendliness towards wife and children.—The

from a number of historical statements, only the general fact that here also he endeavoured to supplement the Aristotelian teaching and that to Aristotle's account of the different kinds of States he added a collection of laws. In his own investigations into the nature of the State he gave special prominence to the discussion of the magisterial offices, and to the treatment of the problems that arise in connection with special circumstances. It is not to be supposed that Theophrastus deviated in any respect from the principles of Aristotle's political doctrine;[1] and if in addition to the national bond of

remaining fragments of Theophrastus's ethical texts give us only isolated remarks, often keen and finely observed, but without any special philosophic interest. Such are the apophthegms preserved by STOBÆUS in the *Florilegium* (see the index thereto) and by PLUTARCH, *Agis*, c, 2, and *Sertor*. c. 13: the statement as to his commendation of hospitality in CIC. *Off*. ii. 18, 64: the remark (probably aimed at Anaxagoras) as to the relation between pleasure and pain, cited by ASPASIUS *in Arist. Eth.* (*Classical Journal*, xxix.) 114. The note *ap.* OLYMPIOD. *in Phileb.* 169 as to the threefold ψεῦδος, relates, not to moral falsehood, but to the possible meanings of ψευδὴς ἡδονὴ (cf. *supra*, vol. ii. p. 404, n. 1.)

[1] For almost everything we know of his politics we are indebted to CICERO. We know, in fact, that he was one of Cicero's favourite political authors (*Ad Att.* ii. 9, 2). Cicero tells us, not only that Theophrastus had thoroughly worked out a political philosophy, with great knowledge of the subject (*Divin*. ii. 1, 3: the 'locus de republica' was, he says, 'a Platone Aristotele Theophrasto totaque Peripateticorum familia tractatus uberrime'; *Legg*. iii. 6, 14: 'Theophrastus vero institutus ab Aristotele habitavit, ut scitis, in eo genere rerum'), but he gives us further details as to the contents of his political writings. *Legg*. iii. 5, 14: 'Sed hujus loci de magistratibus sunt propria quædam, a Theophrasto primum, deinde a Dione [? Diogene] Stoico quæsita subtilius.' *Fin*. v. 4, 14: 'Omnium fere civitatum, non Græciæ solum, sed etiam barbariæ, ab Aristotele mores instituta disciplinas, a Theophrasto leges etiam cognovimus; cumque uterque eorum docuisset, qualem in republica principem esse conveniret, pluribus præterea cum scripsisset, quis esset optimus reipublicæ status: hoc amplius Theophrastus, quæ essent in republica inclinationes rerum et momenta temporum, quibus esset moderandum utcumque res pos-

fellow-citizenship he gives express prominence to the natural brotherhood of all men,[1] yet this is quite in harmony with the spirit of his master,[2] however significant the approach in it may be to the cosmopolitanism of the Stoics.[3]

In one of his ethical writings Theophrastus expressed views upon sacrifice in which the ascetic Aristotelian

tularet.'—Of Theophrastus's political works we know from Diogenes, &c., the νόμοι in twenty-four books (see *Fr.* 97–106; the ἐπιτομὴ νόμων in 10 bks. can only be a later extract from the νόμοι); 1 bk. π. νόμων and 1 bk. π. παρανόμων (DIOG. 47), perhaps also excerpts from the νόμοι; 3 bks. νομοθετῶν (the title was no doubt νομοθέται or περὶ νομοθ.); 4 bks. πολιτικῶν ἐθῶν; 6 bks. πολιτικῶν (D. 45), and again 2 bks. πολιτικῶν (D. 50), which were probably a duplicate or excerpt of the others [unless we are to read in D. 50 with COBET and HENKEL (*Stud. z. Gesch. d. griech. Lehre vom Staat*, p. 20), not πολιτικῶν, but, on the analogy of the Aristotelian πολιτικὸς (*supra*, vol. 1, p. 59) πολιτικοῦ]; 1 bk. π. τῆς ἀρίστης πολιτείας (D. 45) or (D. 49) πῶς ἄριστ' ἂν πόλις οἰκοῖτο; 2 bks. ἐπιτομὴ τῆς Πλάτωνος πολιτείας; 1 bk. π. βασιλείας (D. 42) and 1 bk. π. τυραννίδος (D. 45), both probably combined in the 2 bks. π. βασιλείας (D. 49); πρὸς Κάσσανδρον π. βασιλείας (D. 47), which according to ATHEN. iv. 144, e, was also ascribed to Sosibius; 1 bk. π. παιδείας βασιλέως; 4 bks. πολιτικῶν πρὸς τοὺς καιροὺς (to which also the 2 bks. καιρῶν, D. 50, may be referred). This work is often cited (by CIC. *Fin.* v. 4, 11 as the 'momenta temporum').—Further notes as to these writings and the evidence about them will be found in USENER, *Anal. Th.* 6 sqq., HENKEL, *ibid.* 19 sqq.; and as to the νόμοι in particular, see USENER, *Rhein. Mus.* xvi. 470 sqq.

[1] See the passage *apud* PORPH. *De Abst.* iii. 25, cited *supra*, vol. ii. p. 396, n. 1.

[2] See the passage from *Eth.* viii. 13, 1161, b, 5 referred to *supra*, p. 219, n. 5, where Aristotle says that a friendship with a slave is possible, not indeed ᾗ δοῦλος, but ᾗ ἄνθρωπος· δοκεῖ γὰρ εἶναί τι δίκαιον παντὶ ἀνθρώπῳ πρὸς πάντα τὸν δυνάμενον κοινωνῆσαι νόμου καὶ συνθήκης· καὶ φιλία δή, καθ' ὅσον ἄνθρωπος.

[3] Cf. BERNAYS, *Theophr. üb. Frömmigk.* 100 sq. His remark that in the Aristotelean Ethics there is no note of the love of humanity must be somewhat limited by the passage just cited; but we may concede that in Theophrastus this side of things, which in Aristotle was far less prominent, obtained much greater importance in conformity with the spirit of the new epoch which came with Alexander.

followed Empedocles and anticipated Porphyry.[1] He not only sought historically to prove that originally only the simplest products of nature[2] were used for sacrifices, and that animal offerings especially were of later origin,[3] but he also demanded that men should abstain from the latter, and confine themselves to the more harmless presentation of fruits of the field.[4] The slaughter, moreover, of animals in general and the use of their flesh, in so far as the former was not rendered necessary by their ferocity, the latter by lack of other provisions, he was consistent enough to condemn, on the ground that these beasts are akin to us, and therefore possess rights as against us which forbid us forcibly to rob them of life.[5] He did not, however, on this account desire to renounce the national rites of sacrifice.[6] He merely said that their moral value lay, not in the greatness of the gift, but in the disposition of the giver.[7]

[1] The π. εὐσεβείας, *d. q. v. supra*, vol. ii. p. 355, n. 2.

[2] *E.g.* first grass, then fruits; first water, then honey, and, still later, wine.

[3] PORPH. *De Abstin.* ii. 5–8, 12–15, 20–1, pp. 39, 56, 62, 79, &c., Bern. He dealt with human sacrifices (*ibid.* c. 7) and with the peculiar customs of the Jews as to sacrifices (ii. 26); see, as to the mistakes in the latter section, BERNAYS, p. 109 sqq. 184–5.

[4] *Ibid.* c. 12 sqq. 22 sqq.

[5] *Ibid.* c. 12–18, 22–23, and cf. *supra*, ii. p. 396.

[6] *Ibid.* ii. 43, p. 184: ὥστε κατὰ τὰ εἰρημένα Θεοφράστῳ θύσομεν καὶ ἡμεῖς. The theory which Porphyry here sets out, that this view was founded on a belief in Demonology, cannot be taken from Theophrastus; and, in fact, Porphyry does not ascribe it to him. Nor have we any sufficient ground in PLUT. *Def. Orac.* 20, p. 420, to assert that Theophrastus believed in Dæmons. Even if it be true that the passage correctly represents his attitude to the belief, it would only prove that, while he could not accept it in the prevailing form, he did not feel free to reject it absolutely.

[7] *Apud* STOB. *Floril.* 3, 50, he says: χρὴ τοίνυν τὸν μέλλοντα θαυμασθήσεσθαι περὶ τὸ θεῖον φιλοθύτην εἶναι μὴ τῷ πολλὰ θύειν ἀλλὰ τῷ πυκνὰ τιμᾶν τὸ θεῖον· τὸ μὲν γὰρ εὐπορίας τὸ δ' ὁσιότητος σημεῖον, and *ap.* PORPH. *De Abstin.* ii. c.

His whole conception of religion was undoubtedly identical with that of his master.[1]

From the numerous works of Theophrastus upon Rhetoric[2] only a few not very important observations are preserved.[3] Of his works upon the theory of art[4]

19, he goes on to say that the costliness of the offering is not the important thing, but rather the purity of the intention; for the Godhead will be best pleased by the right direction of that in us which is akin to Himself, and most divine: with which cf. ARIST. *Eth.* ix. 9, 1179, a, 24.

[1] We have shown this of his theology, see *supra*, vol. ii. p. 370 sq. As to matters touching popular religion and its myths, it would be quite in the spirit of Aristotle if Theophrastus explained the Prometheus myth by the theory that Prometheus was the first teacher of men (*Fr.* 50, b. *Schol. in Apoll. Rhod.* ii. 1248), and the myth of the Nymphs nursing Dionysos by reference to the 'tears' of the vine (ATHEN. xi. 465, b).

[2] *De quo* cf. USENER, *Anal. Theophr.* p. 20 whose conjecture, that the words εἴδη ιζ' περὶ τεχνῶν ῥητορικῶν are the general title covering the books separately set out in the list, seems very probable.

[3] The definition of the σκῶμμα as ὀνειδισμὸς ἁμαρτίας παρεσχηματισμένος (PLUT. *Qu. Conv.* ii. 1, 4, 7, p. 631), which is certainly taken from one of the rhetorical books (or perhaps, as BRANDIS, iii. 366, suggests, from the π. γελοίου) and a few similar details (see *Fr.* 93–96, the Index to the *Rhetores Graeci* s. v. 'Theophr.,' CIC. *De Invent.* i. 35, 61), and also the statement of AMMONIUS (*Theophr. Fr.* 74 sq. cf. *supra*, vol. ii. p. 363, n. 3) that Theophr. distinguished in speech a double relation—that to the hearers, and that to the subject in hand. With the former Rhetoric and Poetics are concerned, and these studies accordingly have to do with choice of expression, charm of utterance, pleasing and effective presentation of the subject, &c: τῆς δέ γε πρὸς τὰ πράγματα τοῦ λόγου σχέσεως ὁ φιλόσοφος προηγουμένως ἐπιμελήσεται, τό τε ψεῦδος διελέγχων καὶ τὸ ἀληθὲς ἀποδεικνύς. AMMONIUS cites this sentence to prove that the π. ἑρμηνείας dealt only with the ἀποφαντικὸς λόγος: it must accordingly have referred in the text of Theophr. only to the form of oral statement, and it cannot have been intended as a statement of the distinction between philosophy in general and Rhetoric and Poetics.

[4] DIOG. 47–8, 43 mentions two π. ποιητικῆς, and one π. κωμῳδίας; ATHEN. in vi. 261, d, names the latter, and in viii. 348, a, also the π. γελοίου, but what he professes to cite from it is quite incredible. The statement that Tragedy was ἡρωϊκῆς τύχης περίστασις (DIOMED. *De Oratione*, p. 484, Putsch) could not have satisfied Theophrastus as a complete definition, after the elabo-

the books on music,[1] which were highly valued by the ancients,[2] are the only ones of which we have any detailed information. Even this for the most part refers to the physical explanation of sounds, and has already been dealt with in that connection.[3] Otherwise we learn merely that Theophrastus ascribed the effect of music to a movement of the soul,[4] by means of which we are delivered from the trouble and annoyance caused by certain affections;[5] that he further

rate investigation of the subject which Aristotle had already provided.

[1] PLUT. *N. P. Suav. V. sec. Epic.* 13, 4, p. 1095, argues thus against Epicurus: *τί λέγεις, ὦ Ἐπίκουρε; κιθαρῳδῶν καὶ αὐλητῶν ἕωθεν ἀκροασόμενος εἰς τὸ θέατρον βαδίζεις, ἐν δὲ συμποσίῳ Θεοφράστου περὶ συμφωνιῶν διαλεγομένου καὶ Ἀριστοξένου περὶ μεταβολῶν καὶ Ἀριστοφάνους περὶ Ὁμήρου τὰ ὦτα καταλήψῃ ταῖς χερσί;* He thus places Theophrastus on a level with the famous musician Aristoxenus. The reference to Theophrastus cannot be explained (BRANDIS, iii. 369) of table talk about Music found in one of his books or otherwise published by him, any more than the reference to Aristoxenus could be.

[2] Π. *μουσικῆς* 2 bks. (D. 47 cf. *infra*, n. 3); *ἁρμονικῶν α'* (D. 46); *π. ῥυθμῶν α'* (D. 50). For a Fragm. from bk. ii. *π. μουσ.* (Fr. 89) see *supra*, vol. ii. p. 379, n. 3.

[3] *Supra*, vol. ii. p. 379, n. 3.

[4] So CENSORIN. *Di. Nat.* 12, 1: 'haec [musica] enim sive in voce tantummodo est . . . sive, ut Aristoxenus, in voce et corporis motu, sive in his et præterea in animi motu, ut putat Theophrastus.'

[5] At the end of Fr. 89 he says: *μία δὲ φύσις τῆς μουσικῆς, κίνησις τῆς ψυχῆς* [or, as he put it earlier, *κίνημα μελῳδητικὸν περὶ τὴν ψυχὴν*], *ἡ κατὰ ἀπόλυσιν γιγνομένη τῶν διὰ τὰ πάθη κακιῶν, ἢ εἰ μὴ ἦν*. The manifestly defective clause at the end is amended by BRANDIS, p. 369, by reading, not *ἡ κατὰ ἀπόλ.*, but *ἢ κ. ἀπόλ.* meaning: 'Music is fitted to give us relief from the pains that arise from the emotions, or to awake them where they do not exist.' This sense, however, would require, instead of *εἰ μὴ ἦν* either *ὅπου οὐκ ἔστιν* or *ἐὰν μὴ ᾖ*. Besides, the sense so obtained is not altogether satisfactory. ZELLER suggests that the text may have been somewhat as follows: *ἡ κ. ἀπόλ. . . . κακιῶν, βέλτιον ἔχειν ἡμᾶς ποιεῖ ἢ εἰ μὴ ἦν*: 'Music is a movement of the soul which brings relief from the pains produced by the emotions, and so produces in us a higher kind of wellbeing than we should have had, if these emotions had never been aroused'—which is exactly the Aristotelian idea of Catharsis: cf. *supra*, vol. ii. p. 309 sqq.

His whole conception of religion was undoubtedly identical with that of his master.[1]

From the numerous works of Theophrastus upon Rhetoric[2] only a few not very important observations are preserved.[3] Of his works upon the theory of art[4]

19, he goes on to say that the costliness of the offering is not the important thing, but rather the purity of the intention; for the Godhead will be best pleased by the right direction of that in us which is akin to Himself, and most divine: with which cf. ARIST. *Eth.* ix. 9, 1179, a, 24.

[1] We have shown this of his theology, see *supra*, vol. ii. p. 370 sq. As to matters touching popular religion and its myths, it would be quite in the spirit of Aristotle if Theophrastus explained the Prometheus myth by the theory that Prometheus was the first teacher of men (*Fr.* 50, b. *Schol. in Apoll. Rhod.* ii. 1248), and the myth of the Nymphs nursing Dionysos by reference to the 'tears' of the vine (ATHEN. xi. 465, b).

[2] *De quo* cf. USENER, *Anal. Theophr.* p. 20 whose conjecture, that the words εἴδη ιζ' περὶ τεχνῶν ῥητορικῶν are the general title covering the books separately set out in the list, seems very probable.

[3] The definition of the σκῶμμα as ὀνειδισμὸς ἁμαρτίας παρεσχηματισμένος (PLUT. *Qu. Conv.* ii. 1, 4, 7, p. 631), which is certainly taken from one of the rhetorical books (or perhaps, as BRANDIS, iii. 366, suggests, from the π. γελοίου) and a few similar details (see *Fr.* 93–96, the Index to the *Rhetores Graeci* s. v. 'Theophr.,' CIC. *De Invent.* i. 35, 61), and also the statement of AMMONIUS (*Theophr. Fr.* 74 sq. cf. *supra*, vol. ii. p. 363, n. 3) that Theophr. distinguished in speech a double relation—that to the hearers, and that to the subject in hand. With the former Rhetoric and Poetics are concerned, and these studies accordingly have to do with choice of expression, charm of utterance, pleasing and effective presentation of the subject, &c: τῆς δέ γε πρὸς τὰ πράγματα τοῦ λόγου σχέσεως ὁ φιλόσοφος προηγουμένως ἐπιμελήσεται, τό τε ψεῦδος διελέγχων καὶ τὸ ἀληθὲς ἀποδεικνύς. AMMONIUS cites this sentence to prove that the π. ἑρμηνείας dealt only with the ἀποφαντικὸς λόγος: it must accordingly have referred in the text of Theophr. only to the form of oral statement, and it cannot have been intended as a statement of the distinction between philosophy in general and Rhetoric and Poetics.

[4] DIOG. 47–8, 43 mentions two π. ποιητικῆς, and one π. κωμῳδίας; ATHEN. in vi. 261, d, names the latter, and in viii. 348, a, also the π. γελοίου, but what he professes to cite from it is quite incredible. The statement that Tragedy was ἡρωϊκῆς τύχης περίστασις (DIOMED. *De Oratione*, p. 484, Putsch) could not have satisfied Theophrastus as a complete definition, after the elabo-

the books on music,[1] which were highly valued by the ancients,[2] are the only ones of which we have any detailed information. Even this for the most part refers to the physical explanation of sounds, and has already been dealt with in that connection.[3] Otherwise we learn merely that Theophrastus ascribed the effect of music to a movement of the soul,[4] by means of which we are delivered from the trouble and annoyance caused by certain affections;[5] that he further

rate investigation of the subject which Aristotle had already provided.

[1] PLUT. *N. P. Suav. V. sec. Epic.* 13, 4, p. 1095, argues thus against Epicurus: *τί λέγεις, ὦ Ἐπίκουρε; κιθαρῳδῶν καὶ αὐλητῶν ἕωθεν ἀκροασόμενος εἰς τὸ θέατρον βαδίζεις, ἐν δὲ συμποσίῳ Θεοφράστου περὶ συμφωνιῶν διαλεγομένου καὶ Ἀριστοξένου περὶ μεταβολῶν καὶ Ἀριστοφάνους περὶ Ὁμήρου τὰ ὦτα καταλήψῃ ταῖς χερσί;* He thus places Theophrastus on a level with the famous musician Aristoxenus. The reference to Theophrastus cannot be explained (BRANDIS, iii. 369) of table talk about Music found in one of his books or otherwise published by him, any more than the reference to Aristoxenus could be.

[2] Π. *μουσικῆς* 2 bks. (D. 47 cf. *infra*, n. 3); *ἁρμονικῶν α'* (D. 46); *π. ῥυθμῶν α'* (D. 50). For a Fragm. from bk. ii. *π. μουσ.* (Fr. 89) see *supra*, vol. ii. p. 379, n. 3.

[3] *Supra*, vol. ii. p. 379, n. 3.

[4] So CENSORIN. *Di. Nat.* 12, 1: 'haec [musica] enim sive in voce tantummodo est . . . sive, ut Aristoxenus, in voce et corporis motu, sive in his et praeterea in animi motu, ut putat Theophrastus.'

[5] At the end of Fr. 89 he says: *μία δὲ φύσις τῆς μουσικῆς, κίνησις τῆς ψυχῆς* [or, as he put it earlier, *κίνημα μελῳδητικὸν περὶ τὴν ψυχήν*], *ἡ κατὰ ἀπόλυσιν γιγνομένη τῶν διὰ τὰ πάθη κακιῶν, ἢ εἰ μὴ ἦν.* The manifestly defective clause at the end is amended by BRANDIS, p. 369, by reading, not *ἡ κατὰ ἀπόλ.*, but *ἣ κ. ἀπόλ.* meaning: 'Music is fitted to give us relief from the pains that arise from the emotions, or to awake them where they do not exist.' This sense, however, would require, instead of *εἰ μὴ ἦν* either *ὅπου οὐκ ἔστιν* or *ἐὰν μὴ ᾖ*. Besides, the sense so obtained is not altogether satisfactory. ZELLER suggests that the text may have been somewhat as follows: *ἡ κ. ἀπόλ. . . . κακιῶν, βέλτιον ἔχειν ἡμᾶς ποιεῖ ἢ εἰ μὴ ἦν*: 'Music is a movement of the soul which brings relief from the pains produced by the emotions, and so produces in us a higher kind of wellbeing than we should have had, if these emotions had never been aroused'—which is exactly the Aristotelian idea of Catharsis: cf. *supra*, vol. ii. p. 309 sqq.

enumerated three of these affections: pain, pleasure, and possession;[1] that he connected the lively impression produced by music with the peculiar susceptibility of the auditory sense;[2] and that he held that even physical disease could be cured by music.[3] So far as we may infer from these few fragments the nature of Theophrastus's theory of art, it cannot have been different from that of Aristotle.

[1] PLUT. *Qu. Conv.* i. 5, 2, p. 623: λέγει δὲ Θεόφρ. μουσικῆς ἀρχὰς τρεῖς εἶναι, λύπην, ἡδονήν, ἐνθουσιασμόν, ὡς ἑκάστου τούτων παρατρέποντος ἐκ τοῦ συνήθους καὶ ἐγκλίνοντος τὴν φωνήν. See also JOH. LYDUS, *De Mens.* ii. 7, p. 54, Röth., and in CRAMER'S *Anecd. Paris.* i. 317, 15.

[2] PLUT. *De Aud.* 2, p. 38, a: περὶ τῆς ἀκουστικῆς αἰσθήσεως, ἣν ὁ Θεόφρ. παθητικωτάτην εἶναί φησι πασῶν; whether the further arguments are also taken from Theophrastus it is impossible to say.

[3] ATHEN. xiv. 624, a: ὅτι δὲ καὶ νόσους ἰᾶται μουσικὴ Θεόφρ. ἱστόρησεν ἐν τῷ περὶ ἐνθουσιασμοῦ, ἰσχιακοὺς φάσκων ἀνόσους διατελεῖν, εἰ καταυλήσοι τις τοῦ τόπου τῇ φρυγιστὶ ἁρμονίᾳ. The like in PLIN. *H. N.* xxviii. 2, 21. We are told that viper bites and other hurts were, according to THEOPHR., healed by flute-playing (GELL. iv. 13, 2, APOLLON. *Mirabil.* c. 49).

# CHAPTER XIX

## EUDEMUS, ARISTOXENUS, DICÆARCHUS, AND OTHERS

NEXT in importance to Theophrastus of the immediate disciples of Aristotle[1] comes Eudemus of Rhodes.[2] Rivalling Theophrastus in erudition, he also wrote numerous treatises on the Peripatetic philosophy and the history of science.[3] All that we know of him,

[1] We know nothing further of his life. He is often referred to as 'the Rhodian' and as 'the scholar of Aristotle,' to distinguish him from other men of the same name (*v.* FRITZSCHE, *Eth. Eud.* xiv). As he seems to have framed his *Logic* under Theophrastus's personal influence, but corresponded by letter with him about Aristotle's *Physics* (*v. supra*, vol. i. p. 136, n. 2, p. 143), we may conjecture that he lived for a time at Athens under Theophrastus's teaching, and that he afterwards went to his home, or to some other country. Cf. *infra*, p. 419, n. 2.

[2] He is so described in the story referred to *supra*, vol. i. p. 39, n. 1, and in the statement (*ibid.* p. 80, n.) that he edited Aristotle's *Metaphysics*. This story, however, is made doubly improbable by the statement (ASCLEP. *Schol in Ar.* 519, b, 38 sqq.) that Aristotle sent it to him to ask if it should be published, for the book is obviously incomplete; cf. *Hist.-phil. Abh. d. Berl. Akad.* 1877, p. 156.

[3] We know of the following books by Eudemus (for the passages where they are named see FRITZSCHE, *ibid.* xv., and for the Fragments, see SPENGEL, *Eud. Fragmenta*, ed. ii. 1870): Γεωμετρικαὶ ἱστορίαι, Ἀριθμητικὴ ἱστορία, Ἀστρολογικαὶ ἱστορίαι, the chief and almost the unique source of all later information as to the ancient mathematicians and astronomers. To these may perhaps be added a history of theological ideas; at least, that he went into this inquiry closely, and that in this connection (following Aristotle: cf. *supra*, vol. i. p. 57, n.) he dealt with the cosmogonies of Orpheus, Homer, Hesiod, Acusilaus, Epimenides, and Pherecydes, and

however, goes to show that his merit as a philosopher consisted far more in his appropriation and propagation of Aristotelian doctrines than in any independent development of them.[1] In logic, indeed, as has been already shown, he found it necessary to deviate from his master on isolated points, and in one or two not unimportant respects to supplement the Aristotelian theory;[2] but

also with the Babylonian, Zoroastrian, Phœnician, and (less accurately) the Egyptian theories as to the origin of the world, we learn from DAMASC. *De Princ.* c. 124–5, p. 382 sqq.; cf. DIOG. L. *Proœm.* 9 (*Fr.* 117–8); cf. also *supra*, vol. ii. p. 352, n. 4 *fin.* In the same connection he may well have treated of the Platonic Cosmogony, and the remark preserved by PLUT. *An. Procr.* 7, 3, p. 1015, as to Matter, may have belonged to this discussion, although it might also belong to his *Physics*. There were also a π. γωνίας, an Ἀναλυτικὰ in at least two books (*supra*, i. p. 67, n. 1, ii. p. 358, n. 3; *Fr.* 109 sqq.), a π. λέξεως (*supra*, vol. i. p. 66, n. 1; *Fr.* 113 sqq.); but probably not *Categories* or π. ἑρμηνείας (*supra*, vol. i. p. 65). Then there was the *Physics*, which we shall speak of presently, and the *Ethics*, of which we still possess the first three books and the last (*supra*, vol. i. p. 98, n. 1). A zoological work was also current under his name in later times, as we know from APUL. *Apol.* c. 36 (*Fr.* 109), ÆLIAN, *Hist. An.* iii. 20, 21, iv. 8, 45, 53, 56, v. 7; but what Ælian tells us of its contents does not make for its authenticity. To this Eudemus ROSE (*Arist. Libr. Ord.* 174) also assigns those anatomical inquiries for which a writer named 'Eudemus' is mentioned with praise by GALEN (vide *Index*; ROSE, *ibid.*; SPRENGEL, *Gesch. d. Arzneik.* 4, ed. i. 539–40), RUFUS, *Eph.* i. 9, 20, and the Homeric Scholiast (*v.* FRITZSCHE, *ibid.* xx. 49–50). Since this 'Eudemus,' however, is not in any of these places described as the Rhodian, and since, according to GALEN (*De Ut. Anat.* 3, vol. ii. 890, *De Semine*, ii. 6, vol. iv. 646, *Hippocr. et Plat. Plac.* viii. 1, vol. v. 651, *Loc. Affect.* iii. 14, vol. viii. 212, in *Aphor.* vol. xviii. a, 7, *Libr. Propr.* vol. xix. 30) he was clearly not the senior of Herophilus, and probably not of Erasistratus, who was a pupil of Theophrastus (DIOG. v. 57), nor of the Metrodorus (SEXT. *Math.* i. 258) who is referred to as the third husband of Aristotle's daughter (*supra*, vol. i. p. 20, n. 3); we may more probably suppose that he is another Eudemus.—The rhetorician Eudemus (*De Gen.*: cf. FRITZSCHE, p. xvii) is also to be distinguished from our philosopher.

[1] SIMPL. *Phys.* 93, b: μαρτυρεῖ δὲ τῷ λόγῳ καὶ Εὔδημος ὁ γνησιώτατος τῶν Ἀριστοτέλους ἑταίρων.

[2] Cf. *supra*, vol. ii. p. 358 sqq.

he rightly held fast by its fundamental principles, and in such changes as he made, we gather that he coincided for the most part with Theophrastus, who, as the more independent thinker of the two, probably here led the way.[1] In his account of Aristotle's *Physics*[2] he followed step by step the lines of the original, as a rule retaining its very words.[3] In his own *Physics* he seems to have permitted himself scarcely any important departure from his master,[4] his modifications consisting merely of a reduction of the number of books,[5] a few transpositions,[6] historical and doctrinal explanations, and such

[1] This is indicated by the fact that, beyond those points which they have in common, there is very little noted which is peculiar to Eudemus, but much more which is peculiar to Theophrastus.

[2] Apparently he undertook this work primarily as a text-book for his oral lectures: cf. his words *ap.* SIMPL. *Phys.* 173 a: *εἰ δέ τις πιστεύσειε τοῖς Πυθαγορείοις, ὡς πάλιν τὰ αὐτὰ ἀριθμῷ* [*i.e.* that in a future world each individual entity will recur], *κἀγὼ μυθολογήσω τὸ ῥαβδίον* [the Professor's rod] *ἔχων ὑμῖν καθημένοις.* If we take this passage along with that quoted *supra*, vol. i. p. 136, n. 2, it will be seen to be probable that Eudemus set up a school of his own in some city other than Athens, and that it was for this school that he compiled his *Physics*.

[3] See the very full references given *supra*, i. p. 148, n. 4.

[4] SIMPLICIUS, who so often speaks of EUDEMUS, notes only a single such variance, and that is sufficiently doubtful. He tells us (*ibid.* 93, b, 94, a; *Fr.* 26) that EUDEMUS in his second book ascribed change in time (*i.e.* a becoming old) to the four Aristotelian kinds of motion (*v. supra*, i. p. 423, n. 1). Yet we know that he did not agree with Theophr.'s extension of movement to all the categories (see *supra*, ii. p. 373), and that, in explaining ARIST. *Phys.* v. 2, 226, a, 23, he expressly pointed out that we could only talk of a motion of relation by using the word in a secondary sense (cf. *ibid.* 201, b). Apart from this question, we shall find no variance beyond the expression of a few slight doubts as to unimportant items of detail.

[5] SIMPL. names only three books in the work of Eudemus; and as the citations he gives us extend over all the six earlier Aristotelian books, (cf. following notes) while the seventh was passed over by Eudemus (*supra*, i. p. 82), there cannot in all have been more than four books in the Eudemian *Physics*.

[6] The inquiries which in Ari-

changes in the mode of expression as seemed to him to be necessary for the sake of clearness.[1] In the numerous fragments of his treatise we cannot fail to recognise a true apprehension of the Aristotelian doctrine, careful consideration of the different questions involved in it,

stotle occupy *Phys.* vi. 1–2 were dealt with by Eudemus (acc. to SIMPL. 220, a)—in connection with the question as to the divisibility *ad infinitum* of Space and Time, which is discussed in ARIST. *Phys.* iii. 6 (cf. *supra*, i. p. 430, n. 1)—either wholly or in part in his *second* book; whereas Space and Time in general, discussed by ARIST. in the fourth book of the *Physics*, were by Eudemus placed in the *third* (SIMPL. 124, a, 155, b, 167, b, 169, b, 173, a; THEMIST. *Phys.* 40, a). So also Eudemus dealt in the *second* book (perhaps in the same connection) with the question (which ARISTOTLE discusses *Phys.* vi. 5 *ad fin.*) how far we may say of qualitative change that it takes place in an indivisible time. Otherwise Eudemus seems to have followed the order of the Aristotelian works, excepting always the seventh book. For at the beginning of his commentary on this seventh book, at p. 242, a, SIMPL. says: *καὶ ὅ γε Εὔδημος μέχρι τοῦδε τοῖς ὅλοις σχεδὸν τῆς πραγματείας κεφαλαίοις ἀκολουθήσας, τοῦτο παρελθὼν ὡς περιττὸν ἐπὶ τὰ ἐν τῷ τελευταίῳ βιβλίῳ κεφάλαια μετῆλθεν.* According to what is said at p. 216, a, Eudemus passed directly from the end of the fifth book to the sixth book. Therefore the main part of the fifth and sixth books must have come with Eudemus, as with Aristotle, between the matter of the fourth and that of the eighth.

[1] In the present edition ZELL. has not considered it necessary to demonstrate this position by a review of the Fragments of the Eudemian *Physics*, mostly found in SIMPL., as was done in his second German edition, pp. 701–703: partly because BRANDIS, iii. 218–240, has fully gone into the contents and character of the work, and partly because the materials are also fully given by SPENGEL, *Fr.* 1–82. The only items the latter has passed over are the remarks, *apud* SIMPL. *Phys.* 2, a, (cf. ARIST. *Metaph.* xiv. 1, 1087, b, 13, and DIOG. iii. 24) that Plato was the first who called the material causes *στοιχεῖα*, and the passage cited from PLUTARCH, *supra*, ii. p. 418. In the introduction to this work, Eudemus (*v.* SIMPL. 11, a; *Fr.* 4) raised the question, not touched in the Aristotelian *Physics*, whether each of the different sciences should deduce its own principles, or whether they should in common derive them from one higher science. Here also, however, as ZELLER shows (*Hist.-phil. Abhandl. d. Berl. Akad.* 1877, p. 159 sqq. and *supra*, i. p. 79, n. 1) EUDEMUS was following one of his master's texts—*i.e.* the *Metaphysics* (iii. 2, iv. 3, 5), of which we also find echoes elsewhere in the Eudemian *Physics*.

and a skilful elucidation of many statements and conceptions; but we shall look in vain in them for fresh scientific ideas or observations.[1]

Passing over a noteworthy peculiarity in his doctrine of the Categories,[2] we may observe an important deviation from his master in the borderland between physics and metaphysics. While in general agreeing with Aristotle's theological conceptions,[3] Eudemus yet rightly finds the assertion that the *primum movens* must itself

[1] 'Eudemus,' says BRANDIS, p. 240, very rightly, 'shows himself in his *Physics* as a scholar who follows with care and comprehension the lines of his master's thought, and who only leaves them reluctantly and in minor matters.' When FRITZSCHE, *Eth. Eud.* xviii. rests the opposite view on WEISSE'S statement (*Arist. Phys.* p. 300) that Eudemus in the *Physics* varied greatly from Aristotle, this only shows that neither of them had accurately examined the statements of Simplicius.

[2] In *Eth. N.* i. 4, 1096, a, 24 ARIST. named 6 Categories: τί, ποιὸν, ποσὸν, πρός τι, χρόνος, τόπος; EUDEMUS, on the other hand, says in the *Eth. Eud.* i. 8, 1217, b, 26, that Being and the Good occur in many πτώσεις, the τί, ποιὸν, ποσὸν, πότε, 'καὶ πρὸς τούτοις τὸ μὲν ἐν τῷ κινεῖσθαι τὸ δὲ ἐν τῷ κινεῖν,' where the latter two, not found in Aristotle (*supra*, i. p. 274), appear to replace the Aristotelian ποιεῖν and πάσχειν.

[3] *Fr.* 81, b, SIMPL. 319, a and b, says that the *primum movens* has its seat (cf. Aristotle; *supra*, i. p. 409, n. 4) in the largest of the spheres, that, namely, through the pole of which the axis of the heavens passes, inasmuch as this moves quickest (following the reading which SIMPL. found in Alexander, and which is clearly better than that of the SIMPL. MS. text itself). He maintained, however, following Aristotle (*supra*, i. p. 395), that it had no parts: cf. p. 422, n. 2, *infra*, and Spengel, p. 109: εἰ ἀμερές, φησίν, ἐστι τὸ πρώτως κινοῦν καὶ μὴ ἅπτεται τοῦ κινουμένου, πῶς ἔχει πρὸς αὐτό; Eudemus also repeats the saying that God thinks only on himself (*Eth. Eud.* vii. 12, 1245, b, 16: οὐ γὰρ οὕτως ὁ θεὸς εὖ ἔχει [like a man], ἀλλὰ βέλτιον ἢ ὥστε ἄλλο τι νοεῖν αὐτὸς παρ' αὐτόν. αἴτιον δ' ὅτι ἡμῖν μὲν τὸ εὖ καθ' ἕτερον, ἐκείνῳ δὲ αὐτὸς αὑτοῦ τὸ εὖ ἐστίν), and therefore he deduces the further propositions that the Godhead needs no friends, and that God, by reason of his wide separation from mankind, does not love man, or at least does not so love man as man loves God (see *Eth.* vii. 3–4, 1238, b, 27, 1239, a, 17, c. 12, 1244, b, 7, 1245, b, 14; *supra*, i. p. 398, n. 1).

move with the world in order to move it[1] inconsistent with the immateriality of the *movens*. He does not seem to have observed, however, that the assumption which he himself shares as to its position in space is equally so, nor does he appear to have given any further explanation of the way in which God moves the world.[2]

It is to its theological side, again, that we must look for the most distinctive peculiarity of the Eudemian ethics.[3] Aristotle had confined himself entirely to the

[1] *Supra*, i. p. 409.

[2] Cf. *supra*, ii. p. 421, n. 3; *Fr.* 82, SIMPL. 320, a: ὁ δὲ Εὔδ. τοῦτο μὲν οὐκ ἀπορεῖ ὅπερ ὁ Ἀριστοτέλης, εἰ ἐνδέχεταί τι κινούμενον κινεῖν συνεχῶς, ἀπορεῖ δὲ ἀντὶ τούτου, εἰ ἐνδέχεται τὸ ἀκίνητον κινεῖν· ‘δοκεῖ γάρ, φησί, τὸ κινοῦν κατὰ τόπον ἢ ὠθοῦν ἢ ἕλκον κινεῖν [*supra*, i. p. 423, n. 1]. εἰ δὲ μὴ μόνον οὕτως, ἀλλ' οὖν ἁπτόμενόν γε ἢ αὐτὸ ἢ δι' ἄλλου, ἢ δι' ἑνὸς ἢ πλειόνων, τὸ δὲ ἀμερὲς οὐδενὸς ἐνδέχεται ἅψασθαι· οὐ γάρ ἐστιν αὐτοῦ τὸ μὲν ἀρχὴ τὸ δὲ πέρας, τῶν δὲ ἁπτομένων τὰ πέρατα ἅμα [*supra*, i. p. 438, n. 1]. πῶς οὖν κινήσει τὸ ἀμερές; καὶ λύει τὴν ἀπορίαν λέγων, ὅτι τὰ μὲν κινούμενα κινεῖ τὰ δὲ ἠρεμοῦντα, καὶ τὰ μὲν κινούμενα κινεῖ ἁπτόμενα ἄλλως [l. ἁπτόμενα, τὰ δὲ ἠρεμοῦντα ἄλλως; BRANDIS, iii. 240, conjectures, ἅπτ. ἄλλα ἄλλως, and SPENGEL, p. 110, ἁπτ. ἄλλων; but the words following show that before the ἄλλως there must be some reference to that which is at rest], οὐχ ὁμοίως δὲ πάντα· οὐ γὰρ ὡς ἡ γῆ τὴν σφαῖραν ῥιφθεῖσαν ἐπ' αὐτὴν ἄνω ἐκίνει, οὕτως καὶ τὸ πρώτως κινῆσαν· οὐ γὰρ προγινομένης κινήσεως ἐκεῖνο κινεῖ· οὐ γὰρ ἂν ἔτι πρώτως κινοίη· ἡ δὲ γῆ οὐδέποτε ἠρεμοῦσα πρώτως κινήσει. It is the less easy to see any solution of the question in this argument, that the connection of the *primum movens* with the earth is not satisfactory either in itself or on the lines of the Aristotelian system. For in the theory stated by Eudemus the earth does move by contact, and, further, a thing which by its nature is unmoved cannot be taken as analogous to a thing that is at rest, since rest (see *supra*, i. p. 419, n. 5 *ad fin.*) can only be predicated of that which has motion.

[3] It has already been pointed out (*supra*, i. p. 98, n. 1, cf. ii. p. 176, n. 4) that this text is really a work of Eudemus of which only the first three books and the seventh are preserved; and that FISCHER and FRITZSCHE are in error in referring to it book v. 15, and books vi. and vii. of the *Nicomachean Ethics*. *Eth. Eud.* vii. 13–15 (which Fritzsche, with the majority of the MSS., counts as an eighth book) contains certain fragments of a larger tract, the text of which is much injured. There is, however, no doubt that this tract did in fact stand at the end of the *Eudemian*

natural side of human aims and capacities in his theory of morals; Eudemus connects human action in its origin and end more closely with the divine. With reference to the origin of action he remarks that many people without acting from insight are yet fortunate in all that they do; and as he was unable to regard this phenomenon as accidental on account of the regularity of its occurrence,[1] he held that it must be referred to a fortunate gift peculiar to these persons—a natural uprightness of will and inclination. But whence comes this gift? Man has not given it to himself: it must therefore come from God, who is the source of movement in the world.[2] Insight, moreover, and the virtue

*Ethics* proper (as FRITZSCHE, p. 244, says, and BRANDIS, ii. b, 1564–5, proves), and not before bk. vii. as SPENGEL supposed (p. 401–2, of the text cited *supra*, i. p. 98, n. 1), by reason of *M. Mor.* ii. 7 (from 1206, a, 36 onwards) 8, 9.

[1] On the principles set out *supra*, i. p. 362, n. 5, p. 462, n. 3.

[2] In *Eud.* i. 1, 1214, a, 16, it was said that men could become happy either by μάθησις or by ἄσκησις, or in one of two other ways: ἤτοι καθάπερ οἱ νυμφόληπτοι καὶ θεόληπτοι τῶν ἀνθρώπων, ἐπιπνοίᾳ δαιμονίου τινὸς ὥσπερ ἐνθουσιάζοντες, ἢ διὰ τύχην. He goes on in greater detail at *Eud.* vii. 14: with many people almost everything succeeds, however little φρόνησις they have (ἄφρονες ὄντες κατορθοῦσι πολλὰ ἐν οἷς ἡ τύχη κυρία· ἔτι δὲ καὶ ἐν οἷς τέχνη ἐστὶ, πολὺ μέντοι καὶ τύχης ἐνυπάρχει), and this, on the above principles, is to be attributed, not to chance, but to the φύσις, so that such people are not so much εὐτυχεῖς as εὐφυεῖς. τί δὲ δή; [he goes on at 1247, b, 18] ἆρ' οὐκ ἔνεισιν ὁρμαὶ ἐν τῇ ψυχῇ αἱ μὲν ἀπὸ λογισμοῦ, αἱ δ' ἀπὸ ὀρέξεως ἀλόγου, καὶ πρότεραι αὗται; εἰ γάρ ἐστι φύσει ἡ δι' ἐπιθυμίαν ἡδέος ὄρεξις, φύσει γε ἐπὶ τὸ ἀγαθὸν βαδίζοι ἂν πᾶν. εἰ δή τινές εἰσιν εὐφυεῖς, ὥσπερ οἱ ᾠδικοὶ οὐκ ἐπιστάμενοι ᾄδειν, οὕτως εὖ πεφύκασι καὶ ἄνευ λόγου ὁρμῶσιν, ἀλλ' ὅτι ἡ φύσις εὖ πέφυκε, καὶ ἐπιθυμοῦσι καὶ τούτου καὶ τότε καὶ οὕτως ὡς δεῖ καὶ οὗ δεῖ καὶ ὅτε, οὗτοι κατορθώσουσι κἂν τύχωσιν ἄφρονες ὄντες καὶ ἄλογοι.... ἐκείνους μὲν τοίνυν εὐτυχεῖν διὰ φύσιν ἐνδέχεται. ἡ γὰρ ὁρμὴ καὶ ἡ ὄρεξις οὖσα οὗ ἔδει κατώρθωσεν, ὁ δὲ λογισμὸς ἦν ἠλίθιος. We may ask, he adds, at *Eud.* 1248, a, 15, ἆρ' αὐτοῦ τούτου τύχη αἰτία, τοῦ ἐπιθυμῆσαι οὗ δεῖ καὶ ὅτε δεῖ; and having, as will be seen presently, answered this in the negative, he adds, at line 24: τὸ δὲ ζητούμενον τοῦτ' ἐστὶ, τίς ἡ τῆς κινήσεως ἀρχὴ ἐν τῇ

that springs from it, however much they may differ in themselves from this unreflecting apprehension of right, point to the same source,[1] since every rational activity presupposes the existence of reason, which must itself be the gift of God.[2] And just as virtue in its origin is referred to God, so God is held to be the ultimate end of all intellectual and moral activity. While Aristotle had described scientific knowledge as the highest intellectual activity and the most essential element in happiness, Eudemus further conceives of this knowledge as the knowledge of God, and accordingly converts Aristotle's proposition that happiness is coextensive with thought (*θεωρία*)[3] into the statement that everything

ψυχῇ· δῆλον δή, ὥσπερ ἐν τῷ ὅλῳ, θεὸς καὶ ἐν [so *Fr.* for πᾶν] ἐκείνῳ [— η]. κινεῖ γάρ πως πάντα τὸ ἐν ἡμῖν θεῖον. λόγου δ' ἀρχὴ οὐ λόγος ἀλλά τι κρεῖττον. τί οὖν ἂν κρεῖττον καὶ ἐπιστήμης εἴη [καὶ νοῦ, as SPENGEL and FRITZSCHE add] πλὴν θεός; ἡ γὰρ ἀρετὴ τοῦ νοῦ [better, perhaps, ἐκείνου or τοῦ θεοῦ] ὄργανον . . . ἔχουσι γὰρ ἀρχὴν τοιαύτην, ἣ κρείττων τοῦ νοῦ καὶ βουλεύσεως — they hit the right measure without λόγος, not through practice or experience, but τῷ θεῷ. In the same way, adds Eudemus, prophetic dreams are to be explained: ἔοικε γὰρ ἡ ἀρχὴ [Nous as the principle of immediate knowledge] ἀπολυομένου τοῦ λόγου ἰσχύειν μᾶλλον. Cf. ii. p. 1225, a, 27: the condition of the ἐνθουσιῶντες and προλέγοντες is not a free one, although the resulting activity is rational (διανοίας ἔργον). We find a similar view of τύχη in Aristoxenus.

[1] Since this is without λόγος; see last note, and *Eud. ibid.* 1246, b, 37, 1247, a, 13 sqq.

[2] *Eud. ibid.* 1248, a, 15: in the case of such happily organised natures does the ground of their fortunate φύσις lie in τύχη? ἢ οὕτω γε πάντων ἔσται; καὶ γὰρ τοῦ νοῆσαι καὶ βουλεύσασθαι· οὐ γὰρ δὴ ἐβουλεύσατο βουλευσάμενος [their insight is not the outcome of a previous consideration], ἀλλ' ἔστιν ἀρχή τις, οὐδ' ἐνόησε νοήσας πρότερον νοῆσαι καὶ τοῦτ' εἰς ἄπειρον. οὐκ ἄρα τοῦ νοῆσαι ὁ νοῦς ἀρχή, οὐδὲ τοῦ βουλεύσασθαι βουλή. τί οὖν ἄλλο πλὴν τύχη; ὥστ' ἀπὸ τύχης ἅπαντα ἔσται, εἰ ἔστι τις ἀρχὴ ἧς οὐκ ἔστιν ἄλλη ἔξω. αὕτη δὲ διὰ τί τοιαύτη τῷ εἶναι ὥστε τοῦτο δύνασθαι ποιεῖν; τὸ δὲ ζητούμενον, &c. (see last two notes).

[3] *Eth. N.* x. 8; *supra*, ii. p. 143, n. 1. Eudemus shows how exactly he agrees with Aristotle also in the statement (*Eth. Eud.*

is a good [illegible]
tion of God. [illegible]
reason of [illegible]
worship of [illegible]
supplies [illegible]
exact [illegible]
reason. [illegible]
the [illegible]
in the [illegible]

vii. [illegible]
cf. [illegible]
nothing [illegible]
to live [illegible]
whole [illegible]
a defini[illegible]
reference [illegible]
what [illegible]
healthy [illegible]

that springs from it, however much they may differ in themselves from this unreflecting apprehension of right, point to the same source,[1] since every rational activity presupposes the existence of reason, which must itself be the gift of God.[2] And just as virtue in its origin is referred to God, so God is held to be the ultimate end of all intellectual and moral activity. While Aristotle had described scientific knowledge as the highest intellectual activity and the most essential element in happiness, Eudemus further conceives of this knowledge as the knowledge of God, and accordingly converts Aristotle's proposition that happiness is coextensive with thought (*θεωρία*)[3] into the statement that everything

*ψυχῇ· δῆλον δή, ὥσπερ ἐν τῷ ὅλῳ, θεὸς καὶ ἐν* [so *Fr.* for *πᾶν*] *ἐκείνῳ* [— *η*]. *κινεῖ γάρ πως πάντα τὸ ἐν ἡμῖν θεῖον. λόγου δ' ἀρχὴ οὐ λόγος ἀλλά τι κρεῖττον. τί οὖν ἂν κρεῖττον καὶ ἐπιστήμης εἴη* [*καὶ νοῦ*, as SPENGEL and FRITZSCHE add] *πλὴν θεός; ἡ γὰρ ἀρετὴ τοῦ νοῦ* [better, perhaps, *ἐκείνου* or *τοῦ θεοῦ*] *ὄργανον . . . ἔχουσι γὰρ ἀρχὴν τοιαύτην, ἣ κρείττων τοῦ νοῦ καὶ βουλεύσεως* — they hit the right measure without *λόγος*, not through practice or experience, but *τῷ θεῷ*. In the same way, adds Eudemus, prophetic dreams are to be explained: *ἔοικε γὰρ ἡ ἀρχὴ* [Nous as the principle of immediate knowledge] *ἀπολυομένου τοῦ λόγου ἰσχύειν μᾶλλον*. Cf. ii. p. 1225, a, 27: the condition of the *ἐνθουσιῶντες* and *προλέγοντες* is not a free one, although the resulting activity is rational (*διανοίας ἔργον*). We find a similar view of *τύχη* in Aristoxenus.

[1] Since this is without *λόγος*; see last note, and *Eud. ibid.* 1246, b, 37, 1247, a, 13 sqq.

[2] *Eud. ibid.* 1248, a, 15: in the case of such happily organised natures does the ground of their fortunate *φύσις* lie in *τύχη*? *ἢ οὕτω γε πάντων ἔσται; καὶ γὰρ τοῦ νοῆσαι καὶ βουλεύσασθαι· οὐ γὰρ δὴ ἐβουλεύσατο βουλευσάμενος* [their insight is not the outcome of a previous consideration], *ἀλλ' ἔστιν ἀρχή τις, οὐδ' ἐνόησε νοήσας πρότερον νοῆσαι καὶ τοῦτ' εἰς ἄπειρον. οὐκ ἄρα τοῦ νοῆσαι ὁ νοῦς ἀρχή, οὐδὲ τοῦ βουλεύσασθαι βουλή. τί οὖν ἄλλο πλὴν τύχη; ὥστ' ἀπὸ τύχης ἅπαντα ἔσται, εἰ ἔστι τις ἀρχὴ ἧς οὐκ ἔστιν ἄλλη ἔξω. αὕτη δὲ διὰ τί τοιαύτη τῷ εἶναι ὥστε τοῦτο δύνασθαι ποιεῖν; τὸ δὲ ζητούμενον*, &c. (see last two notes).

[3] *Eth. N.* x. 8; *supra*, ii. p. 143, n. 1. Eudemus shows how exactly he agrees with Aristotle also in the statement (*Eth. Eud.*

is a good in proportion as it leads us to the contemplation of God. All that hinders us on the other hand by reason of excess or defect from the contemplation and worship of God is evil; and it is just this conception which supplies what is wanting in Aristotle, namely a more exact definition of the kind of action that is according to reason. The more persistently we keep that goal in view the less shall we be distracted by the irrational element in the soul.[1] But while the effort after the knowledge

vii. 12, 1244, b, 23 sqq. 1245, a, 9; cf. *supra*, 200, 5), that life is nothing else than αἰσθάνεσθαι καὶ γνωρίζειν, .... ὥστε διὰ τοῦτο καὶ ζῆν ἀεὶ βούλεται [men wish always to live], ὅτι βούλεται ἀεὶ γνωρίζειν.

[1] *Eth. Eud.* vii. 15, 1249, a, 21 (probably the conclusion of the whole work): as the doctor has a definite point of view [ὅρος], by reference to which he judges what is, and how far anything is, healthy. οὕτω καὶ τῷ σπουδαίῳ περὶ τὰς πράξεις καὶ αἱρέσεις τῶν φύσει μὲν ἀγαθῶν οὐκ ἐπαινετῶν δὲ δεῖ τινὰ εἶναι ὅρον καὶ τῆς ἕξεως καὶ τῆς αἱρέσεως καὶ περὶ φυγῆς χρημάτων πλήθους καὶ ὀλιγότητος καὶ τῶν εὐτυχημάτων [l. καὶ φυγῆς, καὶ περὶ χρημάτων πλῆθος καὶ ὀλιγότητα, &c.]. ἐν μὲν οὖν τοῖς πρότερον ἐλέχθη τὸ ὡς ὁ λόγος .... τοῦτο δ' ἀληθὲς μὲν, οὐ σαφὲς δέ [*sup.* ii. p. 163, n. 1] δεῖ δὴ ὥσπερ καὶ ἐν τοῖς ἄλλοις πρὸς τὸ ἄρχον ζῆν καὶ πρὸς τὴν ἕξιν κατὰ τὴν ἐνέργειαν τὴν τοῦ ἄρχοντος .... ἐπεὶ δὲ καὶ ἄνθρωπος φύσει συνέστηκεν ἐξ ἄρχοντος καὶ ἀρχομένου, καὶ ἕκαστον δὲ δέοι πρὸς τὴν ἑαυτῶν ἀρχὴν ζῆν. αὕτη δὲ διττή· ἄλλως γὰρ ἡ ἰατρικὴ ἀρχὴ καὶ ἄλλως ἡ ὑγίεια, ταύτης δὲ ἕνεκα ἐκείνη· οὕτω δ' ἔχει κατὰ τὸ θεωρητικόν. οὐ γὰρ ἐπιτακτικῶς ἄρχων ὁ θεὸς, ἀλλ' οὗ ἕνεκα ἡ φρόνησις ἐπιτάττει (διττὸν δὲ τὸ οὗ ἕνεκα· διώρισται δ' ἐν ἄλλοις), ἐπεὶ ἐκεῖνός γε οὐδενὸς δεῖται. By this reading, in which the words before and after διώρισται are a parenthesis, the argument is that: 'A man should direct his life by that in him which naturally rules; but that is twofold, the active power which determines a man's work, and the end towards which that power works. The former is Reason or φρόνησις; the latter is found in the Godhead: and the Godhead as the highest end of our activity rules us; not, however, like a ruler who gives orders for his own ends, since the Godhead has no need of our services; and God is the end, not in the sense in which man is, but in that higher sense in which he can be also the end for all men.' As to this twofold meaning of the οὗ ἕνεκα Aristotle had stated his views in his work on Philosophy; but his extant works give us only a few hints, from which we gather that a distinction is to be drawn be-

of God is, according to Eudemus, the ultimate source of all morality, yet the form under which the latter first appears and the principle which gives unity in the first instance to all the virtues is that goodness of disposition which he calls uprightness (καλοκἀγαθία), and which consists in the habitual desire for what is absolutely worthy, the noble and the laudable, for its own sake—in other words, in perfected virtue based on love of the good.[1] Aristotle had indeed touched upon this

tween that which profits by an activity and that which is its final end; cf. *Phys.* ii. 3, 194, a, 35: ἐσμὲν γάρ πως καὶ ἡμεῖς τέλος· διχῶς γὰρ τὸ οὗ ἕνεκα· εἴρηται δ' ἐν τοῖς περὶ φιλοσοφίας. *Metaph.* xii. 7; *supra*, i. p. 355, n. 3, *ad fin.* *De An.* ii. 4, 415, b, 1: πάντα γὰρ ἐκείνου [τοῦ θείου] ὀρέγεται, κἀκείνου ἕνεκα πράττει ὅσα πράττει κατὰ φύσιν. τὸ δ' οὗ ἕνεκα διττὸν τὸ μὲν οὗ τὸ δὲ ᾧ. Eudemus seems, in the passage quoted above, to have this last passage in his mind; even if the words τὸ δ' οὗ ἕν. &c., which recur in line 20, should, as TRENDELENBURG thinks, be rejected. Eudemus then goes on: ἥτις οὖν αἵρεσις καὶ κτῆσις τῶν φύσει ἀγαθῶν ποιήσει τὴν τοῦ θεοῦ μάλιστα θεωρίαν. ἢ σώματος ἢ χρημάτων ἢ φίλων ἢ τῶν ἄλλων ἀγαθῶν, αὕτη ἀρίστη καὶ οὗτος ὁ ὅρος κάλλιστος· ἥτις δ' ἢ δι' ἔνδειαν ἢ δι' ὑπερβολὴν κωλύει τὸν θεὸν θέραπεύειν καὶ θεωρεῖν, αὕτη δὲ φαύλη. ἔχει δὲ τοῦτο [sc. ὁ ἔχων: *i.e.* 'but we have this in our soul'] τῇ ψυχῇ καὶ οὗτος τῆς ψυχῆς ὁ [which is not in *Cod. R.* and should be omitted] ὅρος ἄριστος, τὰ [l. τὸ] ἥκιστα αἰσθάνεσθαι τοῦ ἄλλου [*Fr.* rightly ἀλόγου] μέρους τῆς ψυχῆς ᾗ τοιοῦτον.

[1] *Eth. Eud.* vii. 15, *init.*: Having dealt with the several Virtues, we must also consider the whole which is made up by their union. This is καλοκἀγαθία. As the well-being of all parts of the body is the condition of Health, so the possession of all virtues is the condition of Rectitude. It is, however, not the same thing as the mere ἀγαθὸν εἶναι. Only those goods are 'καλὰ,' ὅσα δι' αὑτὰ ὄντα αἱρετὰ (so read with SPENGEL, in lieu of the unmeaning πάντα; cf. *Rhet.* i. 9, *supra*, ii. p. 301, n. 3) ἐπαινετά ἐστιν, and only of the virtues (cf. 1248, b, 36) can this be said. Ἀγαθὸς μὲν οὖν ἐστιν ᾧ τὰ φύσει ἀγαθά ἐστιν ἀγαθά (*v. sup.*, ii. p. 149, n. 3, and *Eth. N.* v. 2, 1129, b, 3), which happens only when the right use is made of these goods (honour, wealth, health, good fortune, &c.); καλὸς δὲ κἀγαθὸς τῷ τῶν ἀγαθῶν τὰ καλὰ ὑπάρχειν αὐτῷ δι' αὑτὰ καὶ τῷ πρακτικὸς εἶναι τῶν καλῶν καὶ αὐτῶν ἕνεκα. If a man proposes to be virtuous, but only for the sake of these natural goods, then he may be indeed ἀγαθὸς ἀνὴρ, but he cannot have καλοκἀγαθία, for he desires the beautiful not for its own

perfect virtue under the name of justice, but only incidentally, and in so far as it presents itself in men's relations to one another:[1] the proper bond of union between the virtues being, in his view, insight.[2] In giving express prominence to the quality of will and disposition which lies at the foundation of all the virtues, Eudemus supplies a lacuna in the Aristotelian account. In effect, however, Aristotle had stated the same principle in his discussion of the essential nature of virtue.[3]

In other respects the Eudemian *Ethics*, so far as it is known to us, differs, like the *Physics*, from the Aristotelian only in individual transpositions, elucidations, and abbreviations, in changes of expression and the meaning of words.[4] Eudemus indeed breaks the close connection between the *Ethics* and the *Politics* by inserting *Economics* as a third science between them.[5] In his *Ethics*, moreover, he gives a more independent place than Aristotle to the cognitive activities and to the corresponding dianoëtic virtues.[6] But these diver-

sake. To those of whom this latter is true, on the other hand (before καὶ προαιροῦνται, at 1249, a, 3, there seems to be a small *lacuna*), not only the beautiful in itself, but also every other good, comes to be 'beautiful,' because it subserves an end which is the beautiful: ὁ δ' οἰόμενος τὰς ἀρετὰς ἔχειν δεῖν ἕνεκα τῶν ἐκτὸς ἀγαθῶν κατὰ τὸ συμβεβηκὸς τὰ καλὰ πράττει. ἔστιν οὖν καλοκἀγαθία ἀρετὴ τέλειος.

[1] *Supra*, ii. p. 170.

[2] *Supra*, ii. p. 166, n. 1.

[3] *Supra*, ii. p. 154, nn. 3, 4; 155, n. 1; p. 149, n. 3.

[4] With what follows cf. FRITZSCHE, *Eth. Eud.* xxix. sqq. and also see BRANDIS, who at ii. b, 1557 sqq. iii. 240 sqq. has put together the variations of the *Eudemian Ethics* from the *Nicomachean*.

[5] Cf. *sup.*, i. p. 186, n. 4. It will be shown *infra*, in discussing the Pseudo-Aristotelian *Economics*, that it is possible that Eudemus himself wrote a treatise on Economics, and that it may perhaps be preserved to us in bk. i. of that work.

[6] *Supra*, ii. p. 178, n. 1. That EUDEMUS, i. 5, 1216, b, 16, includes the poetical and practical sciences under the term ποιητικαὶ ἐπιστῆμαι, in contradistinction to the theoretical, is unimportant.

gencies have no perceptible influence upon his treatment of ethical questions. The further peculiarities of the Eudemian *Ethics* are still more unessential.[1] On

[1] EUD. condenses the opening (*Eth. Nic.* i. 1) into a few words and begins with *Nic.* i. 9, 1099, a, 24; he expressly does away in i. 2, 1214, b, 11 sqq. with the distinction drawn between the constituents and the inseparable conditions of happiness (cf. *supra*, ii. p. 150, n. 1; i. p. 360, n. 1): he expands in i. 5 *Nic.* i. 3 (partly by using *N.* vi. 13; *v. supra*, ii. p. 158, n. 2); inserts in i. 6 methodological observations which are in fact entirely in agreement with Aristotle's views; extends in c. 8 the discussion of the Idea of the Good out of *Nic.* i. 4 with certain general observations; omits the inquiry in *Nic.* i. 10–12 (cf. *supra*, ii. p. 144 foll.) and modifies the argument of *Nic.* i. 8–9 by combining it with what goes before. In the discussion of the nature of Virtue, *Eth. Eud.* ii. 1, 1218, a, 31–1219, b, 26 is Aristotelian matter (*Nic.* i. 6, x. 6 *init.* i. 11 *init.* i. 13, 1102, b, 2 sqq.) freely worked up; what follows is more closely connected with *Nic.* i. 13; and ii. 2 follows *Nic.* ii. 1; so ii. 3 is *Nic.* ii. 2, 1104, a, 12 sqq. ii. 5, 1106, a, 26, ii. 8 *init.*; the sketch of the virtues and vices 1220, b, 36 sqq. (which seems, however, to include later additions: see FRITZSCHE, *ad loc.*) follows *Nic.* ii. 7; 1221, b, 9 sqq. rests on *Nic.* iv. 11, 1126, a, 8 sqq. With *Eud.* ii. 4, cf. *Nic.* ii. 2, 1104, b, 13 sqq. and c. 4 *init. Nic.* ii. 1 (genesis of virtue by virtuous acts) is passed over, and *Nic.* ii. 5 (virtues are neither δυνάμεις nor πάθη, therefore ἕξεις) is hardly touched; that virtue was, however, called not merely ἕξις (*Eud.* ii. 5; c. 10, 1227, b, 8, &c.), but also διάθεσις (ii. 1, 1218, b, 38, 1220, a, 29) is nothing. *Eud.* ii. 5 is in essence taken from *Nic.* ii. 8. The inquiry as to free will, &c., is opened by Eudemus, ii. 6, with an introduction which is peculiar to him, after which he gives, at c. 7–10, in a free selection and order the main points of the Aristotelian argument in *Nic.* iii. 1–7 (cf. BRANDIS, ii. b, 1388 sqq.), and closes in c. 11 with the question (which is not put by, but for the solution of which *Nic.* iii. 5, 1112, b, 12 sqq. is used) whether it is will (προαίρεσις) or insight (λόγος) that virtue directs aright? Eudemus decides for the former, because the main question in virtue is the end of our action, and this is determined by the will; whereas the protection of our power of insight from distortion by desire is the business of ἐγκράτεια, which is a praiseworthy quality, but is to be distinguished from ἀρετή. In the treatment of the specific virtues Eudemus follows his master, with unimportant variations, as follows: iii. 1 (ἀνδρεία) is *Nic.* iii. 8–12; iii. 2 (σωφροσύνη) is *Nic.* iii. 13–15; then we pass (c. 3) to πραότης (*Nic.* iv. 11), and next (c. 4) to ἐλευθεριότης (*N.* iv. 1–3), and in c. 5 to μεγαλοψυχία (*N.* iv. 7–9), and c. 6 to μεγαλοπρέπεια (*N.* iv. 4–6). These are generally abbreviated, and show only a few explanatory additions.

the other hand, the connection of ethics with theology, discussed above, resting though it obviously does upon Aristotelian doctrines, nevertheless presents an unmistakable departure from the spirit of the Aristotelian philosophy and an approach to the Platonic.[1]

With the religious attitude which characterised Eudemus, the naturalism of his fellow-disciples Aristoxenus and Dicæarchus stands in striking contrast. The former of these,[2] who, before he became acquainted with Ari-

Finally, in c. 7 (cf. *N.* iv. 12–15, and *supra*, i. p. 169) Eudemus deals with νέμεσις, αἰδὼς, φιλία, σεμνότης (absent in *Nic.*), ἀλήθεια and ἁπλότης, and εὐτραπελία, all of which, with a certain variance from Aristotle, he treats as laudable qualities, but not as virtues in the strict sense, as being merely μεσότητες παθητικαὶ or φυσικαὶ ἀρεταὶ (1233, b, 18, 1234, a, 23 sqq.), because they do not involve a προαίρεσις. Φιλοτιμία (*Nic.* iv. 10) is passed over; and for certain virtues left without a name by Aristotle (φιλία and ἀλήθεια) Eudemus, as usual, has a technical term—a note of the later date of his book. The three following books we possess only (*v. supra*, i. p. 98, n. 1) in the Aristotelian orginal. The seventh has in c. 1–12 chiefly an original restatement of the matter of the inquiry as to Friendship (in *Nic.* viii. ix.) so constructed that new ideas only appear in minor points, and contradictions of the Aristotelian teaching never. The three final chapters of this book (more correctly bk. viii.) have been already dealt with, *supra*, ii. p. 422, n. 3.

[1] With Eudemus in this connection should be named his nephew Pasicles (*ap.* PHILOP. 'Pasicrates'), who is also called a scholar of Aristotle, if it be true (according to the views set out *supra*, vol. i. p. 79) that he was the author of bk. ii. (α) of the *Metaphysics*. See c. 1, 993, a, 9: ὥσπερ γὰρ καὶ τὰ τῶν νυκτερίδων ὄμματα πρὸς τὸ φέγγος ἔχει τὸ μεθ' ἡμέραν, οὕτω καὶ τῆς ἡμετέρας ψυχῆς ὁ νοῦς πρὸς τὰ τῇ φύσει φανερώτατα πάντων, and cf. with this PLATO, *Rep.* vii. *init.* Otherwise the contents of this book show no remarkable peculiarity.

[2] For the life and works of Aristoxenus see MAHNE, *De Aristoxeno*, Amsterd. 1793, and MÜLLER, *Fragm. Hist. Gr.* ii. 269 sqq., where the Fragments are collected. He was born at Tarentum (SUID. Ἀριστόξ.; STEPHANUS BYZ. *De Urb.* Τάρας), and was the son of Spintharus (DIOG. ii. 20, SEXT. *Math.* vi. 1; as to his alleged second name, 'Mnesias' *apud* SUID., see MÜLLER, p. 269), who was a celebrated musician (ÆLIAN, *H. Anim.* ii. 11, p. 34, Jac.). He learned also, according to SUID. from the musician Lamprus (*de*

changes in the mode of expression as seemed to him to be necessary for the sake of clearness.[1] In the numerous fragments of his treatise we cannot fail to recognise a true apprehension of the Aristotelian doctrine, careful consideration of the different questions involved in it,

stotle occupy *Phys.* vi. 1–2 were dealt with by Eudemus (acc. to SIMPL. 220, a)—in connection with the question as to the divisibility *ad infinitum* of Space and Time, which is discussed in ARIST. *Phys.* iii. 6 (cf. *supra*, i. p. 430, n. 1)—either wholly or in part in his *second* book; whereas Space and Time in general, discussed by ARIST. in the fourth book of the *Physics*, were by Eudemus placed in the *third* (SIMPL. 124, a, 155, b, 167, b, 169, b, 173, a; THEMIST. *Phys.* 40, a). So also Eudemus dealt in the *second* book (perhaps in the same connection) with the question (which ARISTOTLE discusses *Phys.* vi. 5 *ad fin.*) how far we may say of qualitative change that it takes place in an indivisible time. Otherwise Eudemus seems to have followed the order of the Aristotelian works, excepting always the seventh book. For at the beginning of his commentary on this seventh book, at p. 242, a, SIMPL. says: *καὶ ὅ γε Εὔδημος μέχρι τοῦδε τοῖς ὅλοις σχεδὸν τῆς πραγματείας κεφαλαίοις ἀκολουθήσας, τοῦτο παρελθὼν ὡς περιττὸν ἐπὶ τὰ ἐν τῷ τελευταίῳ βιβλίῳ κεφάλαια μετῆλθεν.* According to what is said at p. 216, a, Eudemus passed directly from the end of the fifth book to the sixth book. Therefore the main part of the fifth and sixth books must have come with Eudemus, as with Aristotle, between the matter of the fourth and that of the eighth.

[1] In the present edition ZELL. has not considered it necessary to demonstrate this position by a review of the Fragments of the Eudemian *Physics*, mostly found in SIMPL., as was done in his second German edition, pp. 701–703: partly because BRANDIS, iii. 218–240, has fully gone into the contents and character of the work, and partly because the materials are also fully given by SPENGEL, *Fr.* 1–82. The only items the latter has passed over are the remarks, *apud* SIMPL. *Phys.* 2, a, (cf. ARIST. *Metaph.* xiv. 1, 1087, b, 13, and DIOG. iii. 24) that Plato was the first who called the material causes *στοιχεῖα*, and the passage cited from PLUTARCH, *supra*, ii. p. 418. In the introduction to this work, Eudemus (*v.* SIMPL. 11, a; *Fr.* 4) raised the question, not touched in the Aristotelian *Physics*, whether each of the different sciences should deduce its own principles, or whether they should in common derive them from one higher science. Here also, however, as ZELLER shows (*Hist.-phil. Abhandl. d. Berl. Akad.* 1877, p. 159 sqq. and *supra*, i. p. 79, n. 1) EUDEMUS was following one of his master's texts—*i.e.* the *Metaphysics* (iii. 2, iv. 3, 5), of which we also find echoes elsewhere in the Eudemian *Physics*.

and a skilful elucidation of many statements and conceptions; but we shall look in vain in them for fresh scientific ideas or observations.[1]

Passing over a noteworthy peculiarity in his doctrine of the Categories,[2] we may observe an important deviation from his master in the borderland between physics and metaphysics. While in general agreeing with Aristotle's theological conceptions,[3] Eudemus yet rightly finds the assertion that the *primum movens* must itself

[1] 'Eudemus,' says BRANDIS, p. 240, very rightly, 'shows himself in his *Physics* as a scholar who follows with care and comprehension the lines of his master's thought, and who only leaves them reluctantly and in minor matters.' When FRITZSCHE, *Eth. Eud.* xviii. rests the opposite view on WEISSE'S statement (*Arist. Phys.* p. 300) that Eudemus in the *Physics* varied greatly from Aristotle, this only shows that neither of them had accurately examined the statements of Simplicius.

[2] In *Eth. N.* i. 4, 1096, a, 24 ARIST. named 6 Categories: τί, ποιὸν, ποσὸν, πρός τι, χρόνος, τόπος; EUDEMUS, on the other hand, says in the *Eth. Eud.* i. 8, 1217, b, 26, that Being and the Good occur in many πτώσεις, the τί, ποιὸν, ποσὸν, πότε, 'καὶ πρὸς τούτοις τὸ μὲν ἐν τῷ κινεῖσθαι τὸ δὲ ἐν τῷ κινεῖν,' where the latter two, not found in Aristotle (*supra*, i. p. 274), appear to replace the Aristotelian ποιεῖν and πάσχειν.

[3] *Fr.* 81, b, SIMPL. 319, a and b, says that the *primum movens* has its seat (cf. Aristotle; *supra*, i. p.409, n. 4) in the largest of the spheres, that, namely, through the pole of which the axis of the heavens passes, inasmuch as this moves quickest (following the reading which SIMPL. found in Alexander, and which is clearly better than that of the SIMPL. MS. text itself). He maintained, however, following Aristotle (*supra*, i. p. 395), that it had no parts: cf. p. 422, n. 2, *infra*, and Spengel, p. 109: εἰ ἀμερές, φησίν, ἐστι τὸ πρώτως κινοῦν καὶ μὴ ἅπτεται τοῦ κινουμένου, πῶς ἔχει πρὸς αὐτό; Eudemus also repeats the saying that God thinks only on himself (*Eth. Eud.* vii. 12, 1245, b, 16: οὐ γὰρ οὕτως ὁ θεὸς εὖ ἔχει [like a man], ἀλλὰ βέλτιον ἢ ὥστε ἄλλο τι νοεῖν αὐτὸς παρ' αὑτόν. αἴτιον δ' ὅτι ἡμῖν μὲν τὸ εὖ καθ' ἕτερον, ἐκείνῳ δὲ αὐτὸς αὑτοῦ τὸ εὖ ἐστίν), and therefore he deduces the further propositions that the Godhead needs no friends, and that God, by reason of his wide separation from mankind, does not love man, or at least does not so love man as man loves God (see *Eth.* vii. 3–4, 1238, b, 27, 1239, a, 17, c. 12, 1244, b, 7, 1245, b, 14; *supra*, i. p. 398, n. 1).

move with the world in order to move it[1] inconsistent with the immateriality of the *movens*. He does not seem to have observed, however, that the assumption which he himself shares as to its position in space is equally so, nor does he appear to have given any further explanation of the way in which God moves the world.[2]

It is to its theological side, again, that we must look for the most distinctive peculiarity of the Eudemian ethics.[3] Aristotle had confined himself entirely to the

[1] *Supra*, i. p. 409.

[2] Cf. *supra*, ii. p. 421, n. 3; *Fr.* 82, SIMPL. 320, a: ὁ δὲ Εὔδ. τοῦτο μὲν οὐκ ἀπορεῖ ὅπερ ὁ Ἀριστοτέλης, εἰ ἐνδέχεταί τι κινούμενον κινεῖν συνεχῶς, ἀπορεῖ δὲ ἀντὶ τούτου, εἰ ἐνδέχεται τὸ ἀκίνητον κινεῖν· ‘δοκεῖ γάρ, φησί, τὸ κινοῦν κατὰ τόπον ἢ ὠθοῦν ἢ ἕλκον κινεῖν [*supra*, i. p. 423, n. 1]. εἰ δὲ μὴ μόνον οὕτως, ἀλλ' οὖν ἁπτόμενόν γε ἢ αὐτὸ ἢ δι' ἄλλου, ἢ δι' ἑνὸς ἢ πλειόνων, τὸ δὲ ἀμερὲς οὐδενὸς ἐνδέχεται ἅψασθαι· οὐ γάρ ἐστιν αὐτοῦ τὸ μὲν ἀρχὴ τὸ δὲ πέρας, τῶν δὲ ἁπτομένων τὰ πέρατα ἅμα [*supra*, i. p. 438, n. 1]. πῶς οὖν κινήσει τὸ ἀμερές; καὶ λύει τὴν ἀπορίαν λέγων, ὅτι τὰ μὲν κινούμενα κινεῖ τὰ δὲ ἠρεμοῦντα, καὶ τὰ μὲν κινούμενα κινεῖ ἁπτόμενα ἄλλως [l. ἁπτόμενα, τὰ δὲ ἠρεμοῦντα ἄλλως; BRANDIS, iii. 240, conjectures, ἁπτ. ἄλλα ἄλλως, and SPENGEL, p. 110, ἁπτ. ἄ λ λ ω ν; but the words following show that before the ἄλλως there must be some reference to that which is at rest], οὐχ ὁμοίως δὲ πάντα· οὐ γὰρ ὡς ἡ γῆ τὴν σφαῖραν ῥιφθεῖσαν ἐπ' αὐτὴν ἄνω ἐκίνει, οὕτως καὶ τὸ πρώτως κινῆσαν· οὐ γὰρ προγινομένης κινήσεως ἐκεῖνο κινεῖ· οὐ γὰρ ἂν ἔτι πρώτως κινοίη· ἡ δὲ γῆ οὐδέποτε ἠρεμοῦσα πρώτως κινήσει. It is the less easy to see any solution of the question in this argument, that the connection of the *primum movens* with the earth is not satisfactory either in itself or on the lines of the Aristotelian system. For in the theory stated by Eudemus the earth does move by contact, and, further, a thing which by its nature is unmoved cannot be taken as analogous to a thing that is at rest, since rest (see *supra*, i. p. 419, n. 5 *ad fin.*) can only be predicated of that which has motion.

[3] It has already been pointed out (*supra*, i. p. 98, n. 1, cf. ii. p. 176, n. 4) that this text is really a work of Eudemus of which only the first three books and the seventh are preserved; and that FISCHER and FRITZSCHE are in error in referring to it book v. 15, and books vi. and vii. of the *Nicomachean Ethics*. *Eth. Eud.* vii. 13–15 (which Fritzsche, with the majority of the MSS., counts as an eighth book) contains certain fragments of a larger tract, the text of which is much injured. There is, however, no doubt that this tract did in fact stand at the end of the *Eudemian*

natural side of human aims and capacities in his theory of morals; Eudemus connects human action in its origin and end more closely with the divine. With reference to the origin of action he remarks that many people without acting from insight are yet fortunate in all that they do; and as he was unable to regard this phenomenon as accidental on account of the regularity of its occurrence,[1] he held that it must be referred to a fortunate gift peculiar to these persons—a natural uprightness of will and inclination. But whence comes this gift? Man has not given it to himself: it must therefore come from God, who is the source of movement in the world.[2] Insight, moreover, and the virtue

*Ethics* proper (as FRITZSCHE, p. 244, says, and BRANDIS, ii. b, 1564–5, proves), and not before bk. vii. as SPENGEL supposed (p. 401–2, of the text cited *supra*, i. p. 98, n. 1), by reason of *M. Mor.* ii. 7 (from 1206, a, 36 onwards) 8, 9.

[1] On the principles set out *supra*, i. p. 362, n. 5, p. 462, n. 3.

[2] In *Eud.* i. 1, 1214, a, 16, it was said that men could become happy either by *μάθησις* or by *ἄσκησις*, or in one of two other ways: *ἤτοι καθάπερ οἱ νυμφόληπτοι καὶ θεόληπτοι τῶν ἀνθρώπων, ἐπιπνοίᾳ δαιμονίου τινὸς ὥσπερ ἐνθουσιάζοντες, ἢ διὰ τύχην*. He goes on in greater detail at *Eud.* vii. 14: with many people almost everything succeeds, however little *φρόνησις* they have (*ἄφρονες ὄντες κατορθοῦσι πολλὰ ἐν οἷς ἡ τύχη κυρία· ἔτι δὲ καὶ ἐν οἷς τέχνη ἐστὶ, πολὺ μέντοι καὶ τύχης ἐνυπάρχει*), and this, on the above principles, is to be attributed, not to chance, but to the *φύσις*, so that such people are not so much *εὐτυχεῖς* as *εὐφυεῖς*. *τί δὲ δή;* [he goes on at 1247, b, 18] *ἆρ' οὐκ ἔνεισιν ὁρμαὶ ἐν τῇ ψυχῇ αἱ μὲν ἀπὸ λογισμοῦ, αἱ δ' ἀπὸ ὀρέξεως ἀλόγου, καὶ πρότεραι αὗται; εἰ γάρ ἐστι φύσει ἡ δι' ἐπιθυμίαν ἡδέος ὄρεξις, φύσει γε ἐπὶ τὸ ἀγαθὸν βαδίζοι ἂν πᾶν. εἰ δή τινές εἰσιν εὐφυεῖς, ὥσπερ οἱ ᾠδικοὶ οὐκ ἐπιστάμενοι ᾄδειν, οὕτως εὖ πεφύκασι καὶ ἄνευ λόγου ὁρμῶσιν, ἀλλ' ὅτι ἡ φύσις εὖ πέφυκε, καὶ ἐπιθυμοῦσι καὶ τούτου καὶ τότε καὶ οὕτως ὡς δεῖ καὶ οὗ δεῖ καὶ ὅτε, οὗτοι κατορθώσουσι κἂν τύχωσιν ἄφρονες ὄντες καὶ ἄλογοι .... ἐκείνους μὲν τοίνυν εὐτυχεῖν διὰ φύσιν ἐνδέχεται. ἡ γὰρ ὁρμὴ καὶ ἡ ὄρεξις οὖσα οὗ ἔδει κατώρθωσεν, ὁ δὲ λογισμὸς ἦν ἠλίθιος.* We may ask, he adds, at *Eud.* 1248, a, 15, *ἆρ' αὐτοῦ τούτου τύχη αἰτία, τοῦ ἐπιθυμῆσαι οὗ δεῖ καὶ ὅτε δεῖ;* and having, as will be seen presently, answered this in the negative, he adds, at line 24: *τὸ δὲ ζητούμενον τοῦτ' ἐστί, τίς ἡ τῆς κινήσεως ἀρχὴ ἐν τῇ*

that springs from it, however much they may differ in themselves from this unreflecting apprehension of right, point to the same source,[1] since every rational activity presupposes the existence of reason, which must itself be the gift of God.[2] And just as virtue in its origin is referred to God, so God is held to be the ultimate end of all intellectual and moral activity. While Aristotle had described scientific knowledge as the highest intellectual activity and the most essential element in happiness, Eudemus further conceives of this knowledge as the knowledge of God, and accordingly converts Aristotle's proposition that happiness is coextensive with thought (*θεωρία*)[3] into the statement that everything

ψυχῇ· δῆλον δὴ, ὥσπερ ἐν τῷ ὅλῳ, θεὸς καὶ ἐν [so *Fr.* for πᾶν] ἐκείνῳ [— η]. κινεῖ γάρ πως πάντα τὸ ἐν ἡμῖν θεῖον. λόγου δ' ἀρχὴ οὐ λόγος ἀλλά τι κρεῖττον. τί οὖν ἂν κρεῖττον καὶ ἐπιστήμης εἴη [καὶ νοῦ, as SPENGEL and FRITZSCHE add] πλὴν θεός; ἡ γὰρ ἀρετὴ τοῦ νοῦ [better, perhaps, ἐκείνου or τοῦ θεοῦ] ὄργανον . . . ἔχουσι γὰρ ἀρχὴν τοιαύτην, ἣ κρείττων τοῦ νοῦ καὶ βουλεύσεως — they hit the right measure without λόγος, not through practice or experience, but τῷ θεῷ. In the same way, adds Eudemus, prophetic dreams are to be explained: ἔοικε γὰρ ἡ ἀρχὴ [Nous as the principle of immediate knowledge] ἀπολυομένου τοῦ λόγου ἰσχύειν μᾶλλον. Cf. ii. p. 1225, a, 27: the condition of the ἐνθουσιῶντες and προλέγοντες is not a free one, although the resulting activity is rational (διανοίας ἔργον). We find a similar view of τύχη in Aristoxenus.

[1] Since this is without λόγος; see last note, and *Eud. ibid.* 1246, b, 37, 1247, a, 13 sqq.

[2] *Eud. ibid.* 1248, a, 15: in the case of such happily organised natures does the ground of their fortunate φύσις lie in τύχη? ἢ οὕτω γε πάντων ἔσται; καὶ γὰρ τοῦ νοῆσαι καὶ βουλεύσασθαι· οὐ γὰρ δὴ ἐβουλεύσατο βουλευσάμενος [their insight is not the outcome of a previous consideration], ἀλλ' ἔστιν ἀρχή τις, οὐδ' ἐνόησε νοήσας πρότερον νοῆσαι καὶ τοῦτ' εἰς ἄπειρον. οὐκ ἄρα τοῦ νοῆσαι ὁ νοῦς ἀρχὴ, οὐδὲ τοῦ βουλεύσασθαι βουλή. τί οὖν ἄλλο πλὴν τύχη; ὥστ' ἀπὸ τύχης ἅπαντα ἔσται, εἰ ἔστι τις ἀρχὴ ἧς οὐκ ἔστιν ἄλλη ἔξω. αὕτη δὲ διὰ τί τοιαύτη τῷ εἶναι ὥστε τοῦτο δύνασθαι ποιεῖν; τὸ δὲ ζητούμενον, &c. (see last two notes).

[3] *Eth. N.* x. 8; *supra*, ii. p. 143, n. 1. Eudemus shows how exactly he agrees with Aristotle also in the statement (*Eth. Eud.*

is a good in proportion as it leads us to the contemplation of God. All that hinders us on the other hand by reason of excess or defect from the contemplation and worship of God is evil; and it is just this conception which supplies what is wanting in Aristotle, namely a more exact definition of the kind of action that is according to reason. The more persistently we keep that goal in view the less shall we be distracted by the irrational element in the soul.[1] But while the effort after the knowledge

vii. 12, 1244, b, 23 sqq. 1245, a, 9; cf. *supra*, 200, 5), that life is nothing else than αἰσθάνεσθαι καὶ γνωρίζειν, . . . . ὥστε διὰ τοῦτο καὶ ζῆν ἀεὶ βούλεται [men wish always to live], ὅτι βούλεται ἀεὶ γνωρίζειν.

[1] *Eth. Eud.* vii. 15, 1249, a, 21 (probably the conclusion of the whole work): as the doctor has a definite point of view [ὅρος], by reference to which he judges what is, and how far anything is, healthy. οὕτω καὶ τῷ σπουδαίῳ περὶ τὰς πράξεις καὶ αἱρέσεις τῶν φύσει μὲν ἀγαθῶν οὐκ ἐπαινετῶν δὲ δεῖ τινὰ εἶναι ὅρον καὶ τῆς ἕξεως καὶ τῆς αἱρέσεως καὶ περὶ φυγῆς χρημάτων πλήθους καὶ ὀλιγότητος καὶ τῶν εὐτυχημάτων [l. καὶ φυγῆς, καὶ περὶ χρημάτων πλῆθος καὶ ὀλιγότητα, &c.]. ἐν μὲν οὖν τοῖς πρότερον ἐλέχθη τὸ ὡς ὁ λόγος . . . . τοῦτο δ' ἀληθὲς μὲν, οὐ σαφὲς δέ [*sup.* ii. p. 163, n. 1] δεῖ δὴ ὥσπερ καὶ ἐν τοῖς ἄλλοις πρὸς τὸ ἄρχον ζῆν καὶ πρὸς τὴν ἕξιν κατὰ τὴν ἐνέργειαν τὴν τοῦ ἄρχοντος . . . . ἐπεὶ δὲ καὶ ἄνθρωπος φύσει συνέστηκεν ἐξ ἄρχοντος καὶ ἀρχομένου, καὶ ἕκαστον δὲ δέοι πρὸς τὴν ἑαυτῶν ἀρχὴν ζῆν. αὕτη δὲ διττή· ἄλλως γὰρ ἡ ἰατρικὴ ἀρχὴ καὶ ἄλλως ἡ ὑγίεια, ταύτης δὲ ἕνεκα ἐκείνη· οὕτω δ' ἔχει κατὰ τὸ θεωρητικόν. οὐ γὰρ ἐπιτακτικῶς ἄρχων ὁ θεὸς, ἀλλ' οὗ ἕνεκα ἡ φρόνησις ἐπιτάττει (διττὸν δὲ τὸ οὗ ἕνεκα· διώρισται δ' ἐν ἄλλοις), ἐπεὶ ἐκεῖνός γε οὐδενὸς δεῖται. By this reading, in which the words before and after διώρισται are a parenthesis, the argument is that: 'A man should direct his life by that in him which naturally rules; but that is twofold, the active power which determines a man's work, and the end towards which that power works. The former is Reason or φρόνησις; the latter is found in the Godhead: and the Godhead as the highest end of our activity rules us; not, however, like a ruler who gives orders for his own ends, since the Godhead has no need of our services; and God is the end, not in the sense in which man is, but in that higher sense in which he can be also the end for all men.' As to this twofold meaning of the οὗ ἕνεκα Aristotle had stated his views in his work on Philosophy; but his extant works give us only a few hints, from which we gather that a distinction is to be drawn be-

of God is, according to Eudemus, the ultimate source of all morality, yet the form under which the latter first appears and the principle which gives unity in the first instance to all the virtues is that goodness of disposition which he calls uprightness (καλοκἀγαθία), and which consists in the habitual desire for what is absolutely worthy, the noble and the laudable, for its own sake—in other words, in perfected virtue based on love of the good.[1] Aristotle had indeed touched upon this

tween that which profits by an activity and that which is its final end; cf. *Phys.* ii. 3, 194, a, 35: ἐσμὲν γάρ πως καὶ ἡμεῖς τέλος· διχῶς γὰρ τὸ οὗ ἕνεκα· εἴρηται δ' ἐν τοῖς περὶ φιλοσοφίας. *Metaph.* xii. 7; *supra*, i. p. 355, n. 3, *ad fin.* *De An.* ii. 4, 415, b, 1: πάντα γὰρ ἐκείνου [τοῦ θείου] ὀρέγεται, κἀκείνου ἕνεκα πράττει ὅσα πράττει κατὰ φύσιν. τὸ δ' οὗ ἕνεκα διττὸν τὸ μὲν οὗ τὸ δὲ ᾧ. Eudemus seems, in the passage quoted above, to have this last passage in his mind; even if the words τὸ δ' οὗ ἕν. &c., which recur in line 20, should, as TRENDELENBURG thinks, be rejected. Eudemus then goes on: ἥτις οὖν αἵρεσις καὶ κτῆσις τῶν φύσει ἀγαθῶν ποιήσει τὴν τοῦ θεοῦ μάλιστα θεωρίαν, ἢ σώματος ἢ χρημάτων ἢ φίλων ἢ τῶν ἄλλων ἀγαθῶν, αὕτη ἀρίστη καὶ οὗτος ὁ ὅρος κάλλιστος· ἥτις δ' ἢ δι' ἔνδειαν ἢ δι' ὑπερβολὴν κωλύει τὸν θεὸν θεραπεύειν καὶ θεωρεῖν, αὕτη δὲ φαύλη. ἔχει δὲ τοῦτο [sc. ὁ ἔχων: *i.e.* 'but we have this in our soul'] τῇ ψυχῇ καὶ οὗτος τῆς ψυχῆς ὁ [which is not in *Cod. R.* and should be omitted] ὅρος ἄριστος, τὰ [l. τὸ] ἥκιστα αἰσθάνεσθαι τοῦ ἄλλου [*Fr.* rightly ἀλόγου] μέρους τῆς ψυχῆς ᾗ τοιοῦτον.

[1] *Eth. Eud.* vii. 15, *init.*: Having dealt with the several Virtues, we must also consider the whole which is made up by their union. This is καλοκἀγαθία. As the well-being of all parts of the body is the condition of Health, so the possession of all virtues is the condition of Rectitude. It is, however, not the same thing as the mere ἀγαθὸν εἶναι. Only those goods are 'καλά,' ὅσα δι' αὑτὰ ὄντα αἱρετὰ (so read with SPENGEL, in lieu of the unmeaning πάντα; cf. *Rhet.* i. 9, *supra*, ii. p. 301, n. 3) ἐπαινετά ἐστιν, and only of the virtues (cf. 1248, b, 36) can this be said. Ἀγαθὸς μὲν οὖν ἐστιν ᾧ τὰ φύσει ἀγαθά ἐστιν ἀγαθά (*v. sup.*, ii. p. 149, n. 3, and *Eth. N.* v. 2, 1129, b, 3), which happens only when the right use is made of these goods (honour, wealth, health, good fortune, &c.); καλὸς δὲ κἀγαθὸς τῷ τῶν ἀγαθῶν τὰ καλὰ ὑπάρχειν αὐτῷ δι' αὑτὰ καὶ τῷ πρακτικὸς εἶναι τῶν καλῶν καὶ αὐτῶν ἕνεκα. If a man proposes to be virtuous, but only for the sake of these natural goods, then he may be indeed ἀγαθὸς ἀνὴρ, but he cannot have καλοκἀγαθία, for he desires the beautiful not for its own

perfect virtue under the name of justice, but only incidentally, and in so far as it presents itself in men's relations to one another:[1] the proper bond of union between the virtues being, in his view, insight.[2] In giving express prominence to the quality of will and disposition which lies at the foundation of all the virtues, Eudemus supplies a lacuna in the Aristotelian account. In effect, however, Aristotle had stated the same principle in his discussion of the essential nature of virtue.[3]

In other respects the Eudemian *Ethics*, so far as it is known to us, differs, like the *Physics*, from the Aristotelian only in individual transpositions, elucidations, and abbreviations, in changes of expression and the meaning of words.[4] Eudemus indeed breaks the close connection between the *Ethics* and the *Politics* by inserting *Economics* as a third science between them.[5] In his *Ethics*, moreover, he gives a more independent place than Aristotle to the cognitive activities and to the corresponding dianoëtic virtues.[6] But these diver-

sake. To those of whom this latter is true, on the other hand (before καὶ προαιροῦνται, at 1249, a, 3, there seems to be a small *lacuna*), not only the beautiful in itself, but also every other good, comes to be 'beautiful,' because it subserves an end which is the beautiful: ὁ δ' οἰόμενος τὰς ἀρετὰς ἔχειν δεῖν ἕνεκα τῶν ἐκτὸς ἀγαθῶν κατὰ τὸ συμβεβηκὸς τὰ καλὰ πράττει. ἔστιν οὖν καλοκἀγαθία ἀρετὴ τέλειος.

[1] *Supra*, ii. p. 170.

[2] *Supra*, ii. p. 166, n. 1.

[3] *Supra*, ii. p. 154, nn. 3, 4; 155, n. 1; p. 149, n. 3.

[4] With what follows cf. FRITZSCHE, *Eth. Eud.* xxix. sqq. and also see BRANDIS, who at ii. b, 1557 sqq. iii. 240 sqq. has put together the variations of the *Eudemian Ethics* from the *Nicomachean*.

[5] Cf. *sup.*, i. p. 186, n. 4. It will be shown *infra*, in discussing the Pseudo-Aristotelian *Economics*, that it is possible that Eudemus himself wrote a treatise on Economics, and that it may perhaps be preserved to us in bk. i. of that work.

[6] *Supra*, ii. p. 178, n. 1. That EUDEMUS, i. 5, 1216, b, 16, includes the poetical and practical sciences under the term ποιητικαὶ ἐπιστῆμαι, in contradistinction to the theoretical, is unimportant.

gencies have no perceptible influence upon his treatment of ethical questions. The further peculiarities of the Eudemian *Ethics* are still more unessential.[1] On

[1] EUD. condenses the opening (*Eth. Nic.* i. 1) into a few words and begins with *Nic.* i. 9, 1099, a, 24; he expressly does away in i. 2, 1214, b, 11 sqq. with the distinction drawn between the constituents and the inseparable conditions of happiness (cf. *supra*, ii. p. 150, n. 1; i. p. 360, n. 1): he expands in i. 5 *Nic.* i. 3 (partly by using *N.* vi. 13; *v. supra*, ii. p. 158, n. 2); inserts in i. 6 methodological observations which are in fact entirely in agreement with Aristotle's views; extends in c. 8 the discussion of the Idea of the Good out of *Nic.* i. 4 with certain general observations; omits the inquiry in *Nic.* i. 10–12 (cf. *supra*, ii. p. 144 foll.) and modifies the argument of *Nic.* i. 8–9 by combining it with what goes before. In the discussion of the nature of Virtue, *Eth. Eud.* ii. 1, 1218, a, 31–1219, b, 26 is Aristotelian matter (*Nic.* i. 6, x. 6 *init.* i. 11 *init.* i. 13, 1102, b, 2 sqq.) freely worked up; what follows is more closely connected with *Nic.* i. 13; and ii. 2 follows *Nic.* ii. 1; so ii. 3 is *Nic.* ii. 2, 1104, a, 12 sqq. ii. 5, 1106, a, 26, ii. 8 *init.*; the sketch of the virtues and vices 1220, b, 36 sqq. (which seems, however, to include later additions: see FRITZSCHE, *ad loc.*) follows *Nic.* ii. 7; 1221, b, 9 sqq. rests on *Nic.* iv. 11, 1126, a, 8 sqq. With *Eud.* ii. 4, cf. *Nic.* ii. 2, 1104, b, 13 sqq. and c. 4 *init. Nic.* ii. 1 (genesis of virtue by virtuous acts) is passed over, and *Nic.* ii. 5 (virtues are neither δυνάμεις nor πάθη, therefore ἕξεις) is hardly touched; that virtue was, however, called not merely ἕξις (*Eud.* ii. 5, c. 10, 1227, b, 8, &c.), but also διάθεσις (ii. 1, 1218, b, 38, 1220, a, 29) is nothing. *Eud.* ii. 5 is in essence taken from *Nic.* ii. 8. The inquiry as to free will, &c., is opened by Eudemus, ii. 6, with an introduction which is peculiar to him, after which he gives, at c. 7–10, in a free selection and order the main points of the Aristotelian argument in *Nic.* iii. 1–7 (cf. BRANDIS, ii. b, 1388 sqq.), and closes in c. 11 with the question (which is not put by, but for the solution of which *Nic.* iii. 5, 1112, b, 12 sqq. is used) whether it is will (προαίρεσις) or insight (λόγος) that virtue directs aright? Eudemus decides for the former, because the main question in virtue is the end of our action, and this is determined by the will; whereas the protection of our power of insight from distortion by desire is the business of ἐγκράτεια, which is a praiseworthy quality, but is to be distinguished from ἀρετή. In the treatment of the specific virtues Eudemus follows his master, with unimportant variations, as follows: iii. 1 (ἀνδρεία) is *Nic.* iii. 8–12; iii. 2 (σωφροσύνη) is *Nic.* iii. 13–15; then we pass (c. 3) to πραότης (*Nic.* iv. 11), and next (c. 4) to ἐλευθεριότης (*N.* iv. 1–3), and in c. 5 to μεγαλοψυχία (*N.* iv. 7–9), and c. 6 to μεγαλοπρέπεια (*N.* iv. 4–6). These are generally abbreviated, and show only a few explanatory additions.

the other hand, the connection of ethics with theology, discussed above, resting though it obviously does upon Aristotelian doctrines, nevertheless presents an unmistakable departure from the spirit of the Aristotelian philosophy and an approach to the Platonic.[1]

With the religious attitude which characterised Eudemus, the naturalism of his fellow-disciples Aristoxenus and Dicæarchus stands in striking contrast. The former of these,[2] who, before he became acquainted with Ari-

Finally, in c. 7 (cf. *N.* iv. 12–15, and *supra*, i. p. 169) Eudemus deals with νέμεσις, αἰδὼς, φιλία, σεμνότης (absent in *Nic.*), ἀλήθεια and ἁπλότης, and εὐτραπελία, all of which, with a certain variance from Aristotle, he treats as laudable qualities, but not as virtues in the strict sense, as being merely μεσότητες παθητικαὶ or φυσικαὶ ἀρεταὶ (1233, b, 18, 1234, a, 23 sqq.), because they do not involve a προαίρεσις. Φιλοτιμία (*Nic.* iv. 10) is passed over; and for certain virtues left without a name by Aristotle (φιλία and ἀλήθεια) Eudemus, as usual, has a technical term—a note of the later date of his book. The three following books we possess only (*v. supra*, i. p. 98, n. 1) in the Aristotelian orginal. The seventh has in c. 1–12 chiefly an original restatement of the matter of the inquiry as to Friendship (in *Nic.* viii. ix.) so constructed that new ideas only appear in minor points, and contradictions of the Aristotelian teaching never. The three final chapters of this book (more correctly bk. viii.) have been already dealt with, *supra*, ii. p. 422, n. 3.

[1] With Eudemus in this connection should be named his nephew Pasicles (*ap.* PHILOP. 'Pasicrates'), who is also called a scholar of Aristotle, if it be true (according to the views set out *supra*, vol. i. p. 79) that he was the author of bk. ii. (α) of the *Metaphysics*. See c. 1, 993, a, 9: ὥσπερ γὰρ καὶ τὰ τῶν νυκτερίδων ὄμματα πρὸς τὸ φέγγος ἔχει τὸ μεθ' ἡμέραν, οὕτω καὶ τῆς ἡμετέρας ψυχῆς ὁ νοῦς πρὸς τὰ τῇ φύσει φανερώτατα πάντων, and cf. with this PLATO, *Rep.* vii. *init.* Otherwise the contents of this book show no remarkable peculiarity.

[2] For the life and works of Aristoxenus see MAHNE, *De Aristoxeno*, Amsterd. 1793, and MÜLLER, *Fragm. Hist. Gr.* ii. 269 sqq., where the Fragments are collected. He was born at Tarentum (SUID. Ἀριστόξ.; STEPHANUS BYZ. *De Urb.* Τάρας), and was the son of Spintharus (DIOG. ii. 20, SEXT. *Math.* vi. 1; as to his alleged second name, 'Mnesias' *apud* SUID., see MÜLLER, p. 269), who was a celebrated musician (ÆLIAN, *H. Anim.* ii. 11, p. 34, Jac.). He learned also, according to SUID. from the musician Lamprus (*de*

stotle, had been a student of the Pythagorean philosophy, acquired by his writings on music[1] the highest reputation among musicians of antiquity,[2] and what we know of his works amply justifies his fame. While far outstripping all his predecessors in the completeness of

*quo v.* MAHNE, p. 12; cf. ZELL. *Ph. d. Gr.* i. p. 45, n. 3), from the Pythagorean Xenophilus (*ibid.* i. p. 310, n. 5), and from Aristotle. As a scholar of Aristotle, he is named by CIC. *Tusc.* i. 18, 41, and GELL. *N. A.* iv. 11, 4. He himself refers in *Harm. Elem.* p. 30 (ZELL. *ibid.* p. 596, n. 3), to an oral statement of Aristotle's, and at p. 31 of the same he relates that Aristotle used, in his lecturing, to give out beforehand the subject and general lines of his discussion. SUIDAS relates that, being one of the most notable of Aristotle's scholars, he had expectations of becoming his successor, and that when this did not come about he abused Aristotle after his death. ARISTOCLES, however (*supra*, i. p. 11, n. 1, p. 12, n. 1), refutes the last suggestion, and possibly it was merely the statement cited on p. 11, n. 1 (which refers really to another person), that started the story. We learn further that Aristoxenus lived at first, probably in his youth, at Mantinea, and that he was a friend of Dicæarchus (CIC. in *Tusc.* i. 18, 41, calls him his 'æqualis et condiscipulus,' and in *Ad Att.* xiii. 32, he mentions a letter then extant from Dicæarchus to Aristox.). We know not on what grounds LUCIAN'S story, *Paras.* 35, rests, that he was a 'parasite' of Neleus (? Neleus of Scepsis; but he is of too late a date; *supra*, i. p. 137, n. 1, p. 139, n. 3). In any case, we cannot rely on it. The period of the life of Aristox., of which we cannot fix either limit, is broadly determined by his relations to Aristotle and Dicæarchus: when CYRILL. *C. Jul.* 12 C, places him in Ol. 29 he is confusing him (see MAHNE, 16) with the much earlier Selinuntian poet; he is, however, more correct in 208, B, when he calls him younger than Menedemus of Pyrrha (ZELL. *Ph. d. Gr.* p. 365, n. 2, p. 837).

[1] The list of those known to us, in MÜLLER, p. 270, includes eleven works, some of them in several books, on Music, Rhythm, &c., and also on the Musical Instruments. We still possess the three books π. ἁρμονικῶν στοιχείων, a large fragment of the π. ῥυθμικῶν στοιχείων, and other fragments (*ap.* MAHNE, p. 130 sqq. and MÜLLER, p. 283 sqq.). For the literature covering Aristoxenus's harmonic and rhythmic theories, see UEBERWEG, *Grundr.* i. 216.

[2] Ὁ Μουσικὸς is his regular description. As the chief authority on music, ALEX. in *Top.* 49 classes him with the great men of medicine and mathematics, Hippocrates and Archimedes. Cf. also PLUT. *sup.* ii. p. 415, n. 1;

his investigations,[1] he was distinguished also in a high degree by the strictness of his method,[2] by the accuracy of his definitions, and by the thoroughness of his musical knowledge. He occupied himself besides with questions of natural science, psychology, ethics, and politics,[3] as well as with arithmetic[4] and with historical sketches.[5] Of the reliability of these last, however, his fabulous statements about Socrates and Plato,[6] obviously inspired in part by a depreciatory motive, give us anything but a favourable impression.[7]

The views of Aristoxenus, so far as they are known to us, exhibit a union of the severe morality of the Pythagoreans with the scientific empiricism of the Peri-

CIC. *Fin.* v. 19, 50, *De Orat.* iii. 33, 132; SIMPL. *Phys.* 193, a; VITRUV. i. 14, v. 4.

[1] He frequently himself calls attention, with a certain pride, to the number and importance of the inquiries which he was the first to undertake: *e.g.* in *Harm. El.* pp. 2–7, 35–37, &c.

[2] It is his custom to preface each inquiry by a statement as to the procedure to be followed, and an outline of the argument, so that the reader may be clear as to the way which lies before him, and the exact point at which he finds himself; *Harm. El.* p. 30–1, 3–8, p. 43–4.

[3] His works of ethical interest included, not only the Πυθαγορικαὶ ἀποφάσεις but also a great part of his historical writings about the Pythagoreans. Besides these, we hear of his νόμοι παιδευτικοὶ and νόμοι πολιτικοί. The books about the Pythagoreans may have contained the passages concerning the soul cited in the following notes, since they are closely connected with Pythagorean views. From the σύμμικτα ὑπομνήματα, we have in MÜLLER, 290–1, extracts which relate to natural history.

[4] In the Fragm. from the π. ἀριθμητικῆς, STOB. *Ecl.* i. 16.

[5] He composed a History of Harmonics (cited in *Harm. El.* p. 2) a work on Tragic Poets, another on Flute-players, and also a work called βίοι ἀνδρῶν which dealt apparently with all the famous Philosophers down to Aristotle; and also the ὑπομνήματα ἱστορικὰ, from which we have citations referring to Plato and Alexander the Great. In his other books also there was no doubt much historical matter.

[6] Cf. ZELL. *Ph. d. Gr.* i. pp. 48, 51, 2, 54, 6, 59 sqq. 342, 372, 1, 373, 6, and the story cited by LUCIAN, *Paras.* 35 from Aristoxenus as to Plato's Sicilian journeys.

[7] Generally speaking, the reputation for learning which CIC. *Tusc.* i. 18, 41; GELL. iv. 11, 4; HIERON. *Hist. Eccl.* Præf. accord

patetics. Of a stern and ascetic disposition,[1] although a Peripatetic, he found himself so completely in agreement with the ethical teaching of the Pythagoreans, that he puts his own views into the mouth of philosophers of this school.[2] The views he attributes to Pythagoreans commendatory of piety, moderation, gratitude, fidelity to friends, respect to parents, strict obedience to law, and a careful education of the young,[3] while harmonising with the inner spirit of Pythagorean ethics, at the same time unquestionably express his own opinion. Similarly he connects himself with Pythagoreanism in going a step beyond Eudemus,[4] and referring good fortune partly to a natural gift and partly to divine inspiration.[5] Even in his views upon music the same tendency asserts itself. He attributes to music, as Aristotle, following the Pythagoreans, had

him, may be as well deserved as the reputation for style which CIC. *Ad Att.* viii. 4 concedes to both Aristoxenus and Dicaearchus.

[1] So at least we are told: ÆLIAN, *V.H.* viii. 13, calls him τῷ γέλωτι ἀνὰ κράτος πολέμιος, and ADRAST. *ap.* PROCL. *in Tim.* 192 A. says of him: οὐ πάνυ τὸ εἶδος ἀνὴρ ἐκεῖνος μουσικὸς, ἀλλ' ὅπως ἂν δόξῃ τι καινὸν λέγειν πεφροντικώς.

[2] We must assume that he himself composed, or so far as he took them from ancient sources, at least fully accepted, such Pythagorean sayings as those in the Life of Archytas cited *infra*, in the following notes.

[3] In this connection, cf. the Fragm. quoted in ZELL. *Ph. d. Gr.* i. 428–9, and that *apud* STOB. *Floril.* x. 67 (see MÜLLER, *ibid. Fr.* 17), concerning artificial, natural and morbid desires, and the Fragm. given by ATHEN. xii. 545, a, out of the Life of Archytas (*Fr.* 16), of which, however, he has given only the first half, *i.e.* the speech of Polyarchus in praise of pleasure, while its refutation by Archytas, which must have followed, is not quoted.

[4] *Supra*, ii. p. 422 foll.

[5] *Fr.* 21 *ap.* STOB. *Ecl.* i. 206 (taken from the πυθ. ἀποφάσεις): περὶ δὲ τύχης τάδ' ἔφασκον· εἶναι μέντοι [WYTT. conj. μέν τι] καὶ δαιμόνιον μέρος αὐτῆς, γενέσθαι γὰρ ἐπίπνοιάν τινα παρὰ τοῦ δαιμονίου τῶν ἀνθρώπων ἐνίοις ἐπὶ τὸ βέλτιον ἢ ἐπὶ τὸ χεῖρον, καὶ εἶναι φανερῶς κατ' αὐτὸ τοῦτο τοὺς μὲν εὐτυχεῖς τοὺς δὲ ἀτυχεῖς, as may be seen by the

also done, a moral and educative,[1] and at the same time a purifying, effect, inasmuch as it calms emotion and alleviates morbid states of feeling.[2] But while insisting that music in this aspect should be permitted to retain its original dignity and severity, he holds that the same demand is made by its character as art; and accordingly we find him bitterly complaining of the effeminacy and barbarism which in the music of his time had usurped the place of the earlier classic style.[3] Neverthe-

fact that the former without any judgment reach a fortunate result, and the latter with every care do not. *εἶναι δὲ καὶ ἕτερον τύχης εἶδος, καθ' ὃ οἱ μὲν εὐφυεῖς καὶ εὔστοχοι, οἱ δὲ ἀφυεῖς τε καὶ ἐναντίαν ἔχοντες φύσιν βλάστοιεν*, &c.

[1] STRABO, i. 2, 3, p. 15–6: Poetry as an instrument in education acts not by *ψυχαγωγία*, but for *σωφρονισμὸς*; even the musicians *μεταποιοῦνται τῆς ἀρετῆς ταύτης· παιδευτικοὶ γὰρ εἶναί φασι καὶ ἐπανορθωτικοὶ τῶν ἠθῶν*, as, following the Pythagoreans, Aristoxenus said also. Cf. *Fr.* 17, a (STOB. *Floril.* v. 70, taken from the *πυθ. ἀποφ.*): the true *φιλοκαλία* is not concerned with the outward adornment of life, but consists in a love for the *καλὰ ἔθη ἐπιτηδεύματα* and *ἐπιστῆμαι*. *Harm. El.* 31: *ἡ μὲν τοιαύτη* [*μουσικὴ*] *βλάπτει τὰ ἤθη, ἡ δὲ τοιαύτη ὠφελεῖ*—but we must not on that account demand of Harmonics, which is only a part of the science of *μουσικὴ*, that it should make people morally better. The moral effect of music is referred to in the remark of Aristotle, *ap.* PLUT. *Mus.* c. 17, 1136, e, in opposition to Plato's preference for the Dorian tones: and the matter cited by ORIGENES *ap.* PROCL. *in Tim.* 27 C, from Aristoxenus also belongs to this subject.

[2] MARC. CAPELLA, ix. 923 (*Fr.* 24): Aristox. and the Pythagoreans believed that the 'ferocia animi' can be softened by music. CRAMER, *Anecd. Paris.* i. 172, the Pythagorean, according to Aristox., used for the purification of the body *ἰατρική*, and for that of the soul *μουσική*. PLUT. *Mus.* c. 43, 5, p. 1146–7: Arist. said *εἰσάγεσθαι μουσικὴν* [at banquets] *παρ' ὅσον ὁ μὲν οἶνος σφάλλειν πέφυκε τῶν ἅδην αὐτῷ χρησαμένων τά τε σώματα καὶ τὰς διανοίας. ἡ δὲ μουσικὴ τῇ περὶ αὑτὴν τάξει τε καὶ συμμετρίᾳ εἰς τὴν ἐναντίαν κατάστασιν ἄγει τε καὶ πραΰνει.* Aristox himself is said by APOLLON. *Mirab.* c. 49 (who cites as his authority Theophrastus) to have cured by music a man afflicted with a mental ailment.

[3] THEMIST. *Or.* xxxiii. p. 364: *Ἀριστόξ. ὁ μουσικὸς θηλυνομένην ἤδη τὴν μουσικὴν ἐπειρᾶτο ἀναρρωννύναι, αὐτός τε ἀγαπῶν τὰ ἀνδρικώτερα τῶν κρουμάτων, καὶ τοῖς μαθη-*

less Aristoxenus confronts his Pythagorean predecessors as the founder of a school which remained opposed to theirs down to the latest ages of antiquity.[1] He reproaches them, not only with their imperfect treatment of the subject,[2] but also with their capricious method of procedure: since, instead of following the guidance of facts, they had, as he believed, imposed certain *a priori* presuppositions upon them. He himself demands, indeed, as opposed to an unscientific empiricism, principles and proofs; but he starts from the data of experience, and refuses to seek for the essence and causes of that which perception reveals to us in any other field than that which these supply.[3] In order,

*ταῖς ἐκκελεύων τοῦ μαλθακοῦ ἀφεμένους φιλεργεῖν τὸ ἀρρενωπὸν ἐν τοῖς μέλεσιν*; whereon follows an attack on the theatre music of his own time. Aristox. himself says in *Fr.* 90 (*ap.* ATHEN. xiv. 632, a): as the people of the Italian Posidonia, who were first Greeks and now Tyrrheneans or Romans, still celebrate yearly the Hellenic festival of sorrow because they have become barbarians, *οὕτω δὴ οὖν, φησί, καὶ ἡμεῖς, ἐπειδὴ καὶ τὰ θέατρα ἐκβαρβάρωται καὶ εἰς μεγάλην διαφθορὰν προελήλυθεν ἡ πάνδημος αὕτη μουσική, καθ' αὑτοὺς γενόμενοι ὀλίγοι ἀναμιμνησκόμεθα οἵα ἦν ἡ μουσική*. Cf. also *Harm. El.* 23, and the remarks *apud* PLUT. *Qu. Conv.* vii. 8. 1, 4, p. 711 C, where Aristox. calls his opponents *ἄνανδροι καὶ διατεθρυμμένοι τὰ ὦτα δι' ἀμουσίαν καὶ ἀπειροκαλίαν*, and *De Mus.* c. 31, p. 1142, where he tells a contemporary how ill it becomes him to conform to the taste of the day.

[1] Cf. as to this opposition of the Pythagoreans or Harmonists, and the Aristoxenians, whose differences Ptolemæus seeks to solve, BOJESEN, *De Harmon. Scientia Graec.* (Hafn. 1833) p. 19 sqq. and the citations there from PTOLEMÆUS, *Harm.* i. (c. 2, 9, 13, &c.), PORPHYR. in *Ptol. Harm.* (Wallis. *Opp.* iii.) 189, 207, 209–10, CÆSAR, *Grundz. der Rhythmik*, 22–3.

[2] *Supra*, vol. ii. p. 431, n. 1.

[3] *Harm. El.* 32: *φυσικὴν γὰρ δή τινα φαμὲν ἡμεῖς τὴν φωνὴν κίνησιν κινεῖσθαι, καὶ οὐχ ὡς ἔτυχε διάστημα τιθέναι. καὶ τούτων ἀποδείξεις πειρώμεθα λέγειν ὁμολογουμένας τοῖς φαινομένοις, οὐ καθάπερ οἱ ἔμπροσθεν, οἱ μὲν ἀλλοτριολογοῦντες καὶ τὴν μὲν αἴσθησιν ἐκκλίνοντες, ὡς οὖσαν οὐκ ἀκριβῆ, νοητὰς δὲ κατασκευάζοντες αἰτίας, καὶ φάσκοντες λόγους τέ τινας ἀριθμῶν εἶναι καὶ τάχη πρὸς ἄλληλα, ἐν οἷς τό τε ὀξὺ καὶ βαρὺ γίνεται, πάντων ἀλλοτριωτάτους λόγους λέγοντες καὶ ἐναντιωτάτους τοῖς φαινομένοις*·

moreover, to establish his conclusions upon an independent basis, he excludes on principle all those which might be borrowed from another science: the theory of music, he holds, must be limited to its own proper field, but it must completely exhaust it.[1]

We cannot here enter more fully into Aristoxenus's theory of music, and must be content with the statement of its most general principles as an indication of its character and tendency.[2]

οἱ δὲ ἀποθεσπίζοντες ἕκαστα ἄνευ αἰτίας καὶ ἀποδείξεως, οὐδὲ αὐτὰ τὰ φαινόμενα καλῶς ἐξηριθμηκότες. ἡμεῖς δὲ ἀρχάς τε πειρώμεθα λαβεῖν φαινομένας ἁπάσας τοῖς ἐμπείροις μουσικῆς καὶ τὰ ἐκ τούτων συμβαίνοντα ἀποδεικνύναι . . . . ἀνάγεται δ' ἡ πραγματεία εἰς δύο· εἴς τε τὴν ἀκοὴν καὶ εἰς τὴν διάνοιαν. τῇ μὲν γὰρ ἀκοῇ κρίνομεν τὰ τῶν διαστημάτων μεγέθη, τῇ δὲ διανοίᾳ θεωροῦμεν τὰς τούτων δυνάμεις. Music is not like Geometry. The latter has no need of observation; τῷ δὲ μουσικῷ σχεδόν ἐστιν ἀρχῆς ἔχουσα τάξιν ἡ τῆς αἰσθήσεως ἀκρίβεια, p. 38, *ad fin.*: ἐκ δύο γὰρ τούτων ἡ τῆς μουσικῆς σύνεσίς ἐστιν, αἰσθήσεώς τε καὶ μνήμης. P. 43, *ad fin.*: three things are needful—right apprehension of the phenomena, right arrangement of them, and right conclusions from them. As to the somewhat hostile criticisms of later writers, such as PTOLEMÆUS (*Harm.* i. 2, 13), PORPHYR. (in *Ptol. Harm.* Wallis. *Opp.* iii. 211), and BOETHIUS (*De Mus.* 1417, 1472, 1476) upon the method of Aristoxenus, see MAHNE, p. 167 sqq. BRANDIS, iii. 380–1.

[1] *Harm. El.* 44: Harmonics must begin with data which are immediately established by perception. καθόλου δὲ ἐν τῷ ἄρχεσθαι παρατηρητέον, ὅπως μήτ' εἰς τὴν ὑπερορίαν ἐμπίπτωμεν, ἀπό τινος φωνῆς ἢ κινήσεως ἀέρος ἀρχόμενοι, μήτ' αὖ κάμπτοντες ἐντὸς [narrowing the bounds of our knowledge] πολλὰ τῶν οἰκείων ἀπολιμπάνωμεν. In fact, however, Aristox. does not go into the physical inquiries as to the nature of tones; see next note, and cf. *ibid.* pp. 1 and 8.

[2] The basis on which Aristox. proceeds in his *Harmonics* is the human voice (cf. *Harm. El.* 19, 20, and CENSORIN. c. 12, who says that Aristox. held that music consisted 'in voce et corporis motu'—but he cannot conclude from this that he considered it to consist merely in this and to have no deeper basis, especially as this would be in contradiction with the quotation *supra*, vol. ii. p. 432, n. 5, and as CENSORIN. in the same passage, says of Socrates also that, according to him, music was 'in voce tantummodo'). The voice has two kinds of movement: that of speech and that of song. For speech it

Aristoxenus further described the Soul as a harmony, and more definitely as the harmony of the Body. The activities of the soul were held by him to spring from the concurrent movements of the bodily organs as their

has a continuous motion; for song a movement of intervals (κίνησις συνεχὴς and διαστηματική): that is, in speech we have a continual change of tone, while in singing each tone is held for a certain time at the same level (*ibid.* p. 2, 8). Whether a tone is in itself a form of motion or no, Aristox. says he will not inquire (*ibid.* p. 9, 12); he says a tone is 'at rest' so long as it does not change its note, but allows that this may be an actual rest or may be merely a sameness of motion (ὁμαλότης κινήσεως ἢ ταὐτότης); nor will he go into the question whether the voice really can hold exactly the same note, for it is enough that it appears to us to do so. ἁπλῶς γὰρ, ὅταν ἂν οὕτω κινῆται ἡ φωνὴ, ὥστε μηδαμοῦ δοκεῖν ἵστασθαι τῇ ἀκοῇ, συνεχῆ λέγομεν ταύτην τὴν κίνησιν, ὅταν δὲ στῆναί που δόξασα εἶτα πάλιν διαβαίνειν τινὰ τόπον φανῇ. καὶ τοῦτο ποιήσασα πάλιν ἐφ' ἑτέρας τάσεως [level of tone] στῆναι δόξῃ, καὶ τοῦτο ἐναλλὰξ ποιεῖν φαινομένη συνεχῶς διατελῇ, διαστηματικὴν τὴν τοιαύτην κίνησιν λέγομεν. The result of this must be a bad 'circulus in definiendo,' by which the ἐπίτασις φωνῆς is defined as a movement of the voice from a low to a high note, and the ἄνεσις φωνῆς a movement from a high to a low one, while ὀξύτης, conversely, is defined as τὸ γενόμενον διὰ τῆς ἐπιτάσεως, and βαρυτης as τὸ γενόμενον διὰ τῆς ἀνέσεως (p. 10). Again, the lesser δίεσις (quarter tone) is given as the smallest perceptible and stateable difference of tone (pp. 13–4), while the greatest which can be represented by the human voice or by any single instrument is said to be the διὰ πέντε καὶ δὶς διὰ πασῶν (= two octaves and a fifth) (p. 20). The notions of tone and interval are defined (p. 16–7), and the different tone-systems are given (p. 17–8) with the statement that of these the diatonic is the most original, the chromatic the next, and the enharmonic the last, so that the ear is with difficulty accustomed to it (p. 19), &c. The further course of the inquiry cannot be followed here. That Aristox. (as in *Harm.* pp. 24, 45–46) fixed the compass of the fourth at two and a half, of the fifth at three and a half, and of the octave at six tones, whereas the true compass is rather less, because the half-tones of the fourth and fifth are not a full half, is matter of criticism in PTOLEM. *Harm.* i. 10; BOETH. *De Mus.* 1417; CENSORIN. *Di. Nat.* 10, 7. Cf. also PLUT. *An. Procr.* c. 17, p. 1020–1 (where the ἁρμονικοὶ are the followers of Aristox., elsewhere called ὀργανικοὶ or μουσικοί). It is possible that in his treatment of rhythm Aristox. also treated of the letters of the alphabet as the elements of speech; see DIONYS. *Comp. Verb.* p. 154.

common product; a disturbance in one of these parts, which destroys the concord of their movements, causes the extinction of consciousness—in other words, death.[1] In this doctrine he only followed a view which had been already adopted by others—probably Pythagoreans—before him.[2] It would commend itself all the more to him as an empiric in that it offered an explanation of the soul which harmonised with his views upon music. Just as in music he confines himself to the facts of experience, so in treating of the life of the soul he confines himself strictly to its sensible manifestations; and just as there he sees harmony arising from the concurrence of particular sounds, so he holds that the

[1] CIC. *Tusc.* i. 10, 20: 'Aristox. . . . ipsius corporis intentionem [τόνος] quandam [animam dixit]; velut in cantu et fidibus quæ harmonia dicitur, sic ex corporis totius natura et figura varios motus cieri, tanquam in cantu sonos.' Cf. c. 18, 41, where, on the other hand, we are told: 'membrorum vero situs et figura corporis vacans animo quam possit harmoniam efficere, non video.' C. 22, 51: 'Dicæarchus quidem et Aristox. . . . nullum omnino animum esse dixerunt.' LACTANT. *Instit.* vii. 13 (perhaps also following Cicero): 'quid Aristox., qui negavit omnino ullam esse animam, etiam cum vivit in corpore?'—but held that as harmony is engendered out of the tension of strings, 'ita in corporibus ex compage viscerum ac vigore membrorum vim sentiendi existere.' LACT. *Opif. D.* c. 16: 'Aristox. dixit, mentem omnino nullam esse, sed quasi harmoniam in fidibus ex constructione corporis et compagibus viscerum vim sentiendi existere . . . scilicet ut singularum corporis partium firma conjunctio membrorumque omnium consentiens in unum vigor motum illum sensibilem faciat animumque concinnet, sicut nervi bene intenti conspirantem sonum. Et sicuti in fidibus, cum aliquid aut interruptum aut relaxatum est, omnis canendi ratio turbatur et solvitur, ita in corpore, cum pars aliqua membrorum duxerit vitium, destrui universa, corruptisque omnibus et turbatis occidere sensum eamque mortem vocari.'

[2] ZELL. *Ph. d. Gr.* i. 413. Aristox. probably stated this view in his books on the Pythagoreans; but what is quoted from him by JAMBL. *Theol. Arithm.* p. 41, as to the Metempsychosis of Pythagoras does not prove that Aristox. himself believed in that doctrine.

soul originates in the concurrence of bodily movements.

Along with Aristoxenus his friend and fellow-disciple[1] Dicæarchus of Messene[2] is usually classed, on account of his views upon the nature of the soul,[3] which he appears to have made even more expressly and thoroughly the subject of his investigations.[4] He also held that the soul has no absolute independent

[1] As to this, see CIC. *Tusc.* i. 18, *Ad Att.* xiii. 32, and *supra*, vol. ii. p. 429, n. 2.

[2] According to SUID. *s. v.*, he was the son of Phidias, born at Messene in Sicily, a scholar of Aristotle, a philosopher, a rhetorician and a geometrician. He is often called a Messenian and a scholar of Aristotle (*e.g.* CIC. *Legg.* iii. 6, 14; ATHEN. xi. 460-1, xv. 666, b and a). Why THEMISTIUS names him among the traducers of Aristotle (*supra*, vol. i. p. 40, n. 1), it is difficult to say; for neither the circumstance referred to by MÜLLER (*Fragm. Hist. Gr.* ii. 225-6) that he gave more importance to the practical life than Aristotle did (see below), nor the fact (which OSANN, p. 46, connects with this accusation) that Dicæarchus departed from Aristotle's teaching as to the soul, has anything to do with their *personal* relations, of which THEMIST. is speaking. It is possible that THEMIST. or his copyists have inserted the wrong name: Demochares, for example, might be suggested instead.—We have no further information about Dicæarchus, except that he lived in the Peloponnesus (CIC. *Ad Att.* vi. 2) and that he was employed by the Macedonian kings to measure the heights of mountains (PLIN. *H. Nat.* ii. 65, 162), which work we know that he did in the Peloponnesus, for SUIDAS ascribes to him *καταμετρήσεις τῶν ἐν Πελοποννήσῳ ὀρῶν.* His learning is praised by PLIN. (*loc. cit.*), by CIC. *Ad Att.* ii. 2 and elsewhere, and by VARRO, *De R. R.* i. 1 (cf. MÜLLER, *ibid.* p. 226). His dates of birth and death cannot be exactly determined. As to his life and writings, see OSANN, *Beitr.* ii. 1-119; FUHR, *Dicæarchi Messen. quæ supersunt* (Darmst. 1841); MÜLLER, *Fragm. Hist. Gr.* ii. 225 sqq., from whom the Fragments hereafter cited are taken.

[3] CIC. *Tusc.* i. 18, 41, 22, 51.

[4] We know from CIC. *Ad Att.* xiii. 32, *Tusc.* i. 10, 21, 31, 77; PLUT. *Adv. Col.* 14, 2, p. 1115, that he wrote two works on the soul, which were dialogues, one laid at Corinth, the other in Lesbos. Whether with either of these (OSANN, 40-1, suggests the Κορινθιακὸς) the work *De Interitu Hominum* (CIC. *Off.* ii. 5, 16; *Consol.* ix. 351) was identical must remain an unsolved problem; but it seems improbable.

existence of its own, but is merely the result of the mixture of material constituents, being in fact nothing else than the harmonious union of the four elements in a living body: only as it is united to the body accordingly and diffused through all its parts does the soul partake of reality.[1] It was only, therefore, to be expected that he should from this point of view vigorously combat the belief in immortality.[2] It is more surprising to be told that he believed in revelations through dreams and ecstatic states.[3] These, however,

[1] CIC. *Tusc.* i. 10, 21: Dic. makes a certain Pherecrates maintain, 'nihil esse omnino animum et hoc esse nomen totum inane . . . neque in homine inesse animum vel animam nec in bestia; vimque omnem eam, qua vel agamus quid vel sentiamus [κίνησις and αἴσθησις were already indicated by ARIST. *De An.* i. 2, 403, b, 25, as the distinguishing marks of the ἔμψυχον], in omnibus corporibus vivis æquabiliter esse fusam, nec separabilem a corpore esse, quippe quæ nulla sit [cf. 11, 24: nihil omnino animum dicat esse], nec sit quidquam nisi corpus unum et simplex [the body alone], ita figuratum ut temperatione naturæ vigeat et sentiat;' *Ibid.* 18, 41: '[Dic.] ne condoluisse quidem unquam videtur, qui animum se habere non sentiat;' 22, 51 (*v. supra*, vol. ii. p. 437, n. 1, and *Acad.* ii. 39, 124). SEXT. says he taught μὴ εἶναι τὴν ψυχὴν (*Pyrrh.* ii. 31), μηδὲν εἶναι αὐτὴν παρὰ τὸ πῶς ἔχον σῶμα (*Math.* vii. 349). ATTICUS, *ap.* EUS. *Praep. Ev.* xv. 9, 5: ἀνῄρηκε τὴν ὅλην ὑπόστασιν τῆς ψυχῆς. JAMBL. *ap.* STOB. *Ecl.* i. 870: the soul was, according to Dicæarchus, τὸ τῇ φύσει συμμεμιγμένον, ἢ τὸ τοῦ σώματος ὄν, ὥσπερ τὸ ἐμψυχῶσθαι· αὐτῇ δὲ μὴ παρὸν τῇ ψυχῇ ὥσπερ ὑπάρχον. (?) SIMPL. *Categ. Schol. in Ar.* 68, a, 26: Δικ. . . . τὸ μὲν ζῷον συνεχώρει εἶναι, τὴν δὲ αἰτίαν αὐτοῦ ψυχὴν ἀνῄρει. NEMES. *Nat. Hom.* p. 68: Δικαίαρχος δὲ [τὴν ψυχὴν λέγει] ἁρμονίαν τῶν τεσσάρων στοιχείων (so also PLUT. *Plac.* iv. 2, 5; STOB. *Ecl.* i. 796; HERMIAS, *Irris.* p. 402), which is the same as κρᾶσις καὶ συμφωνία τῶν στοιχείων. For it is not the musical kind of 'harmony,' which is meant, but the harmonious mixture of the warm, cold, moist and dry elements in the body. Accordingly he is said to have considered the soul as ἀνούσιος (which means, not immaterial, as OSANN, p. 48, translates it, but non-substantial). The meaning of TERTULL. *De An.* c. 15 (cf. *infra*, under STRATO) is not clear.

[2] CIC. *Tusc.* i. 31, 77, LACTANT. *Instit.* vii. 7, 13; and cf. next note.

[3] PS.-PLUT. *Plac.* v. 1, 4: Ἀριστοτέλης καὶ Δικ. τὸ κατ' ἐνθουσιασμὸν [γένος μαντικῆς] μόνον παρεισάγουσι

he was doubtless able, like Aristotle,[1] to reconcile with his doctrine of the soul by means of a natural explanation.[2] That he was no friend of divination and the priestly arts of prophecy can easily be gathered from the fragments of his work upon the Cave of Trophonius.[3]

Connected with Dicæarchus's view of the soul is his assertion that the practical life is superior to the theoretic.[4] One who held, as he did, that the soul was inseparably united to the body could not ascribe to that activity of thought in which it withdraws from all that is external in order to become absorbed in itself, the same value as Plato and Aristotle, following out their view of the nature of mind, had done. Conversely, one who found the highest activity of the soul only in the practical side of life must necessarily have been all the more ready to conceive of it as not in its nature separable from the bodily organs, but as the operative force that pervades them. But Dicæarchus demands

*καὶ τοὺς ὀνείρους, ἀθάνατον μὲν εἶναι οὐ νομίζοντες τὴν ψυχὴν, θείου δέ τινος μετέχειν αὐτήν.* Similarly in CIC. *Divin.* i, 3, 5, 50, 113. Cf. *ibid.* ii. 51, 10: 'magnus Dicæarchi liber est, nescire ea [quæ ventura sint] melius esse, quam scire.'

[1] Cf. *supra*, vol. ii. pp. 76, 328.

[2] The proposition (PSEUDO-PLUT. in the last note but one) that the soul has something divine, would not stand in his way, for even Democritus (ZELL. *Ph. d. Gr.* i. 812–3) admits as much. It is, however, questionable whether the *Placita* have any right to couple Dicæarchus with Aristotle in this connection. Certainly we cannot ascribe to him what CIC. *Divin.* i. 50, 113, says as to the loosing of the soul from the body in sleep and in excitement, and, in fact, Cicero does not name Dicæarchus for his view.

[3] *Fr.* 71–2, *ap.* ATHEN. xiv. 641, e, xiii. 594, e; cf. OSANN, p. 107 sqq.

[4] CIC. *Ad Att.* ii. 16: 'quoniam tanta controversia est Dicæarcho, familiari tuo, cum Theophrasto, amico meo, ut ille tuus *τὸν πρακτικὸν βίον* longe omnibus anteponat, hic autem *τὸν θεωρητικόν*.' Cf. *ibid.* vii. 3.

that just as this psychic force penetrates the whole body, the moral force should manifest itself throughout the whole of human life: it is not the lecture that makes the philosopher; it is not the public oration or the official business that makes the statesman; but the philosopher is he who carries his philosophy into every circumstance and action of his life, the statesman he who dedicates his whole life to the service of the people.[1]

With this strong practical bent Dicæarchus naturally found political studies especially attractive; and accordingly we hear, not only generally that he gave special attention to these,[2] but also that he wrote accounts of Greek Constitutions;[3] particularly we know that in his *Tripoliticus*—a development of Aristotelian ideas[4]—he proposed a combination of the three pure forms of constitution (democracy, aristocracy, and monarchy) as the best, and pointed to Sparta as an example of this combination.[5] Beyond this we know hardly anything

[1] This is the leading idea of the passage in PLUT. *An seni s. ger. resp.* c. 26, p. 796, of which we may assume that its general content belongs to Dicæarchus and not merely the single sentence καὶ γὰρ τοὺς ἐν ταῖς στοαῖς ἀνακάμπτοντας περιπατεῖν φασὶν, ὡς ἔλεγε Δικαίαρχος, οὐκέτι δὲ τοὺς εἰς ἀγρὸν ἢ φίλον βαδίζοντας. The meaning of that sentence will then be as follows: as people use the word περιπατεῖν only of walking, which is done directly for the sake of movement, so they commonly use the words φιλοσοφεῖν and πολιτεύεσθαι only of those activities which expressly and directly serve a philosophic or a political aim; but the one use is as incorrect as the other.

[2] CIC. *Legg.* iii. 5, 14.

[3] CIC. *Ad Att.* ii. 2 (cf. OSANN, p. 13 sqq.) names accounts by him of the Constitutions of Pella, Corinth, and Athens, which probably were parts of a general History of Constitutions, if not indeed of the Βίος Ἑλλάδος (*infra*); SUID. says that his πολιτεία Σπαρτιατῶν (which may also have been part of the *Tripoliticus*) was publicly read in Sparta every year.

[4] Cf. *supra*, vol. ii. p. 230 sq., and especially pp. 278 sqq.

[5] That this was the main idea of the Τριπολιτικὸς and that

of Dicæarchus's political philosophy.[1] We may pass over the fragments of his numerous writings upon history, geography, and the development of literature and art, especially as the views expressed in them are of no particular philosophical interest.[2]

CICERO, who studied and admired Dicæarchus (*supra*, vol. ii. p. 440, n. 4; *Tusc.* i. 31, 77, 'deliciæ meæ Dicæarchus'; *Ad Att.* ii. 2), borrowed from him the theory of the amalgamation of these forms of Constitution and the idea of exhibiting this amalgamation in a working polity, and that probably POLYB. vi. 2–10 also follows Dicæarchus, has been shown by OSANN, *ibid.* p. 8 sqq., who, however, is wrong in treating as genuine the political Fragments of Archytas and Hippodamus, and in citing in support of his view PLUT. *Qu. Conv.* viii. 2, 2, 3, p. 718, where Dicæarchus is merely speaking of the combination of Socratic and Pythagorean elements in Plato. This inference assumes the highest degree of probability when we observe that PHOT. *Bibl. Cod.* 37, p. 8, a (following some scholar of the sixth century) speaks of εἶδος πολιτείας δικαιαρχικὸν, which consists in an amalgamation of the three kinds of constitution, and is the best kind of government, and that (according to *Fr.* 23 b. ATHEN. iv. 141, a) the *Tripoliticus* contained an exact description of the Spartan Phiditia, and when we compare with these data the fashion in which both Cicero in the *Republic* (*e.g.* i. 29, 45–6, and ii. 28, 39) and Polybius *loc. cit.* deal with the subject. OSANN also suggests (p. 29 sqq.) that the work for which CIC. *Ad Att.* xiii. 32 says he wishes to make use of the *Tripoliticus*, was the 'De Gloria.'

[1] Direct information on this head we have none, except the remark (cited by PLUT. *Qu. Conv.* iv. Procem. p. 659), that we should seek the good will of all, but the friendship of the good. We gather from PORPH. *De Abst* iv. 1, 2 (see next note), and from the saying (CIC. *Off.* ii. 5, 16, *Consol.* ix. 351 Bip.) that many more men have been ruined by the hands of men than by wild beasts or catastrophes of nature, that Dic. denounced war. According to PORPH. *ibid.* it seems that Dic. (like Theophrastus) saw even in the custom of slaughtering animals, the commencement of a downward tendency.

[2] His views as to the conical form of the earth (*Fr.* 53; PLIN. *H. N.* ii. 65, 162) and the eternity of the world and of the races of men and animals are purely Aristotelian (*Fr.* 3, 4 *ap.* CENS. *Di. Nat.* c. 4; VARRO, *R. Rust.* ii. 1); and inasmuch as he strove (using the myth of the rule of Kronos) to represent with much intelligence the original condition of mankind and the gradual transition from a primitive state of nature to pastoral life (with which began the eating of flesh and war) and the further advance to an agricultural life (*Fr.* 1–5, b; PORPH.

Of another Peripatetic known to us by name, Phanias,[1] the friend and fellow-citizen of Theophrastus, we possess only isolated statements upon history and science.[2] The same is true of Clearchus of Soli;[3] since although among his writings, so far as they are known to us,[4] none are historical,[5] yet almost all the quotations from them which we possess relate to history, and these are for the most part so paltry and insignificant,[6] and

*De Abstin.* iv. 1, 2, p. 295–6; HIERON. *Adv. Jovin.* II. t. iv. b, 205, Mart.; CENSOR. c. 4; VARRO, *R. R.* ii. 1, i. 9) he must, like Aristotle and Theophrastus (*supra*, vol. ii. pp. 30 sq. 378 sq.), have supposed that the history of human civilisation moved in a settled cycle.

[1] Our information as to the life of this man (from SUID. *s. v.*; STRABO, xiii. 2, 4, p. 618; PLUT. *Themist.* c. 13; AMMON. *in Categ.*, *Schol. in Ar.* 28, a, 40) is limited to the statements that he belonged to Eresos, that he was a scholar of Aristotle, and lived in and after Ol. 111 (in Ol. 111, 2, Aristotle returned from Macedonia to Athens). DIOGENES, v. 37, quotes a letter which Theophrastus, when he was advanced in age, wrote to this Phanias, *de quo* cf. also *Schol. in Apoll. Rhod.* i. 972.

[2] We hear of various historical works of Phanias; a work π. ποιητῶν, another on the Socratics (which may have dealt with other philosophers also); a book πρὸς τοὺς σοφιστὰς, of which the πρὸς Διόδωρον (Diodorus Kronus) was perhaps a part, and a π. φυτῶν, to which the matter cited by PLIN. *H. Nat.* xxii. 13, 35 from 'Phanias the physicist' may have belonged. He is also said to have written works on Logic (AMMON. *ibid.*, and *v. supra*, vol. i. p. 64, n. 1). The information which exists about these texts, and the fragments of them which are preserved, have been collected by VOISIN (*De Phania Eres.* Gand. 1824) and after him by MÜLLER, *Fragm. Hist. Gr.* ii. 293 sqq.

[3] He is often called Σολεύς; and that the Cyprian, not the Cilician, Soli is meant, is clear (as many have observed, and as MÜLLER, *ibid.* 302, maintains against VERRAERT, *De Clearcho Sol.* Gand. 1828, p. 3–4) from ATHEN. vi. 256, c. e. f. We know nothing more about his life, except that he was a scholar of Aristotle. (See notes on next page.)

[4] See the list and Fragm. *apud* VERRAERT and MÜLLER, *ubi supra.*

[5] Even the π. βίων, which seems to have been his chief work, and from which we have citations of books 1, 2, 3, 4 and 8, cannot have been, if we are to judge by these Fragments, a biographical work, but only a discussion of the value of different kinds of lives: cf. MÜLLER, *ibid.* p. 302.

[6] This cannot be wholly due to the fact that we owe the citations to a gossip like Athenæus.

exhibit so little critical power, while Clearchus's own conjectures are so devoid of taste,[1] that they give us but a mean opinion of their author's powers. Generally it may be said that what we know of him is little fitted to establish the assertion that he is second to none of the Peripatetics,[2] although, on the other hand, it must be confessed that we do not know what those departures from the true Peripatetic doctrine were with which Plutarch charges him.[3] Besides a few unimportant scientific assertions,[4] and a discussion of the different kinds of riddles,[5] some hints as to his views upon ethics can be extracted from the fragments of Clearchus: these, however, merely amount to the statements that luxury and extravagance are in the highest degree reprehensible,[6] although, on the other hand, Cynic and Stoic indifference to external circumstances are far from

[1] E.g. his explanation of the myth of the egg of Leda, *ap.* ATHEN. ii. 57, e: 'the ancients in place of ὑπερῷον used ᾠὸν simply, and so, since Helen was begotten in a ὑπερῷον, the story arose that she came out of an egg'!—his statement, *ap* DIOG. i. 81, as to Pittacus (evidently founded only on the well-known verse *ap.* PLUT. *VII. Sap. Conv.* c. 14, p. 157, e): τούτῳ γυμνασία ἦν σῖτον ἀλεῖν—and his idea that (*Fr.* 60 *ap.* Müller) the man-eating steeds of Diomedes meant his daughters!

[2] JOSEPH. *C. Apion.* i. 22, ii. 454 Haverc.: Κλ. ὁ Ἀριστοτέλους ὢν μαθητὴς καὶ τῶν ἐκ τοῦ περιπάτου φιλοσόφων οὐδενὸς δεύτερος. ATHEN. xv. 701, c.: Κλ. ὁ Σολεὺς οὐδενὸς δεύτερος τῶν τοῦ σοφοῦ Ἀριστοτέλους μαθητῶν.

[3] *De Fac. Lun.* 2, 5, p. 920: ὑμέτερος γὰρ ὁ ἀνήρ, Ἀριστοτέλους τοῦ παλαιοῦ γεγονὼς συνήθης, εἰ καὶ πολλὰ τοῦ περιπάτου παρέτρεψεν.

[4] *Fr.* 70–74, a, 76, 78; cf. SPRENGEL, *Gesch. d. Arzneik.* (fourth edition); *v.* ROSENBAUM, i. 442–3.

[5] *Fr.* 63, *apud* ATHEN. x. 448, c. cf. PRANTL, *Gesch. d. Log.* i. 399 sq.

[6] So Clearchus, in his π. βίων, had recounted the numerous examples of these failings and their consequences, which ATHENÆUS cites from him (*Fragm.* 3–14, cf. *Fr.* 16–18, 21–23); and, on the other hand (*Fr.* 15, *ap.* ATHEN. xii. 548, d), named Gorgias to prove the wholesome effects of moderation.

praiseworthy;[1] that a sharp distinction must be drawn between friendship and flattery;[2] that passionate and unnatural love should be avoided,[3] and such like. On the whole, Clearchus gives us the impression rather of a versatile and well-read, though somewhat superficial, man of letters,[4] than of a scholar and philosopher.

Among the pupils of Aristotle is sometimes reckoned Heraclides of Pontus. It has already been remarked,[5] however, that neither the chronology nor the character of his doctrines is favourable to this assumption, although his learned efforts show that he was certainly closely akin to the Peripatetic school. Aristotle's influence may have had a more decided effect upon the orator and poet Theodectes, who died, however, before Alexander's Persian expedition.[6] Several other Aristotelians, such as Callisthenes,[7]

[1] *Apud* ATHEN. xiii. 611, b, he distinguishes (apparently in opposition to the Cynics and perhaps to the Stoics also) between *βίος καρτερικὸς* and the *βίος κυνικός*.

[2] Cf. *Fr.* 30, 32 (ATHEN. vi. 255, b, xii. 533, e) with the bold sketch of a young and weak Prince ruined by flattering courtiers, &c. *Fr.* 25–6 (ATHEN. vi. 255, c. 258, a).

[3] *Fr.* 34–36 (ATHEN. xiii. 573, a, 589, d, 605, d, e).

[4] The conversation between Aristotle and a Jew reported by Clearchus (*Fr.* 69, *ap.* JOSEPH. *C. Apion.* i. 22), may be regarded as a literary invention, together with the accompanying explanation that the Jews derived their philosophy from India. The book cited (*π. ὕπνου, de quo* BERNAYS, *Abh. d. Hist.-philos. Gesellsch. in Breslau*, i. 1858, 190, 'Theophr. üb. Frömmigk.' 110, 187) need not, from our extant information as to Clearchus, be considered spurious.

[5] *Supra*, vol. ii. p. 387, n. 1, p. 433 sqq.; cf. ZELL. *Ph. d. Gr.* i. p. 843, n. 1.

[6] On this writer, who is often quoted by Aristotle, and of whom we have suggested (*supra*, vol. i. p. 72, n., following PLUT. *Alex.* c. 17) that he was with Aristotle in Macedonia, see WESTERMANN'S *Gesch. d. Beredsamk. bei d. Griech. u. Röm.* i. 84, A, 6, 142, A, 21, and *supra*, vol. i. p. 40, n. 2, p. 72.

[7] This kinsman and scholar of Aristotle is referred to *supra*, vol. i. p. 22, n. 1 *ad fin.* (see also VALER. MAX. vii. 2, ext. 8, SUID.

Leo of Byzantium,[1] and Clytus,[2] are known to us only as writers on history, Meno[3] only as the author of a history of pharmacology.[4] Of a theological work of Hipparchus of Stagira only the title has come down to us.[5] Of those who are not accredited with any written or oral teaching of their own, we need say nothing.[6]

Καλλισθ.), and as to his death, see *supra*, vol. i. p. 32 sqq. Further information about him and his writings will be found in GEIER, *Alex. Hist. Script.* 191 sqq.; MÜLLER, *Script. Rer. Alex.* 1 sqq.

[1] The little we can glean of this historian (whom SUID. Λέων Βυζ. confounds with an earlier politician of Byzantium of the same name) from SUID. *ibid.*, ATHEN. xii. 553-1, and PSEUDO-PLUT. *De Fluv.* 2, 2, 24, 2, is set out in MULLER, *Fragm. Hist. Gr.* ii. 328–9.

[2] ATHEN. xiv. 655, b, xii. 540, c; DIOG. i. 25; MÜLLER, *ibid.* 333.

[3] GALEN, in *Hippocr. de Nat. Hom.* vol. xv. 25–26 K., says this physician was a scholar of Aristotle's, and wrote an ἰατρικὴ συναγωγὴ in several books, erroneously ascribed to Aristotle himself. It is clear that this was an historical collection of medical theories, both from the title (which is the equivalent of the Τεχνῶν συναγωγὴ *supra*, vol. i. p. 73, n. 1), and also from the remark of Galen, that he had used for this work all the writings of earlier physicians then extant.

[4] Of the historian Marsyas (*supra*, vol. i. p. 22, n. 1) we cannot tell whether and how far he adhered to the Peripatetic philosophy.

[5] SUID. Ἵππαρχ. (cf. LOBECK, *Aglaoph.* 608) names a work of his: τί τὸ ἄρρεν καὶ θῆλυ παρὰ θεοῖς καὶ τίς ὁ γάμος, καὶ ἄλλα τινά.

[6] Including Adrastus of Philippi (STEPH. BYZ. *De Urb.* Φίλιπποι); Echecratides of Methymna (STEPH. BYZ. Μήθυμνα); King Cassander (PLUT. *Alex.* c. 74); Mnason of Phocis (ATHEN. vi. 264, d.; ÆLIAN, *V. H.* iii. 19); Philo, whom, according to ATHEN. xiii. 610–11, and DIOG. v. 38, Sophocles, the author of the law referred to *supra*, vol. ii. p. 350, n. 4, indicted for an offence against the constitution; the Eucairos named *supra*, vol. i. p. 97 (cf. HEITZ, *Verl. Schr.* 118-19), and the 'Plato' named by DIOG. iii. 109. Antipater was Aristotle's friend, but not his pupil.

# CHAPTER XX

## SCHOOL OF THEOPHRASTUS: STRATO

WITH the majority of those who belonged to the school of Theophrastus, the literary and historical tendency seems also to have been the predominating one. Most of those who are mentioned as belonging to it have confined themselves in their literary labours to history, the history of literature, ethics, politics, and rhetoric. This is true of Demetrius of Phalerus, distinguished as a scholar and statesman;[1] of

[1] OSTERMANN has studied his life in the most thorough manner in *De Demetrii Phal. Vita*, &c., published (Part I.) Hersf. 1847, and (Part II.) Fulda, 1857; the titles and fragments of his writings are given by him in Part II., and by HERWIG, *Ueber Demetr. Phal. Schriften*, &c., Rinteln, 1850. Born about the middle of the fourth century (OST. i. 8), and probably while Aristotle was still alive, DEMETRIUS studied under Theophrastus (CIC. *Brut.* 9, 37, *Fin.* v. 19, 54, *Legg.* iii. 6, 14, *Off.* i. 1, 3; DIOG. v. 75), and (according to DEMETR. MAGN. *apud* DIOG. v. 75) he made his first appearance as a popular orator about the time that Harpalus came to Athens, *i.e.* about 324 B.C. On the termination of the Lamian War he seems, with Phocion, to have played some part as one of the chiefs of the Macedonian aristocratic party, for when, after Antipater's death (318 B.C.), the opposition party came into power for a while, and Phocion was executed, Demetrius also was tried and condemned to death (PLUT. *Phoc.* 35). He escaped his sentence, however, by flight, and when, in the following year, Cassander made himself master of Athens, he handed over to Demetrius the direction of the State under an oligarchical republican constitution. For ten years Demetrius occupied this position, and even if it be admitted that his rule may not have been blameless, he did most important service for the prosperity and order of Athens. He is accused of vanity, haughti-

Duris,[1] and his brother Lynceus[2] of Chamæleon,[3] and

ness, and immorality by DURIS and DIYLLUS, *ap.* ATHEN. xii. 542, b sqq. xiii. 593, e, f (though ÆLIAN, *V. H.* ix. 9, transfers the statement to Demetrius Poliorcetes); but the untrustworthiness of Duris and the animus of his statements lead us to suppose a high degree of exaggeration. When Demetrius Poliorcetes, in 307 B.C., took the Piræus, an insurrection broke out in Athens against Demetrius Phal. and Cassander's party. Protected by Poliorcetes, he escaped to Thebes, and finally, after Cassander's death (Ol. 120, 2, 298–99 B.C.), went to Egypt. Here Ptolemy Lagi accorded him an honourable and influential position, in which he was specially active in founding the Alexandrian library (OST. i. 26–64: who, however, on p. 64 makes a very improbable suggestion, *ibid.* ii. 2 sqq.; cf. GRAUERT, *Hist. u. phil. Analekten*, i. 310 sqq.; DROYSEN, *Gesch. d. Hellenism.* ii. b, 106 sqq). After the death of this prince (and according to HERMIPP. *apud* DIOG. v. 78 *immediately* after, which would be 283 B.C.) Ptolemy Philadelphus, whose succession Demetrius had opposed, banished him to a place in the country, where he lived some time as a political prisoner, and where he eventually died from the bite of an adder (CIC. *Pro Rabir. Post.* 9, 23, says this was a suicide; but HERMIPP., *ut supra*, states it as an accident). CICERO speaks very highly of his talents as an orator and as a scholar (see *Brut.* 9, 37 sq. 82, 285, *Orat.* 27, 92, *De Orat.* ii. 23, 95, *Offic.* i. 1, 3, and cf. QUINT. *Inst.* x. 1, 33, 80, and DIOG. v. 82), although he does not find in his speeches the fire and the power of the great orators of free Athens. That he brought about the translation of the so-called Septuagint is palpably a fable, as to which OSTERMANN ought not to have credited the lying Aristæus (ii. 9 sqq. 46–7). So also the work on the Jews is a forgery, although both HERWIG (pp. 15–16), and OSTERMANN (ii. 32–3), have accepted it.

[1] All we know of DURIS is that he was a Samian and a pupil of Theophrastus (see ECKERTZ's account of him, *De Duride Sam.* Bonn, 1846; MÜLLER, *Fragm. Hist. Gr.* ii. 466 sqq. and ATHEN. iv. 128, a). To define the exact date of his lifetime (cf. MÜLLER, *ibid.*) is not possible. According to ATHEN. viii. 337, d, he had, at some period, governed his native town, but when we cannot say. His untrustworthiness in historical matters is very unfavourably criticised in PLUT. *Pericl.* 28. That this criticism is borne out by what we know of the statements cited from DURIS, ECKERTZ has amply proved. Nor is his literary talent highly thought of either by PHOT. *Cod.* 176, p. 121, a, 41 sqq., or by DIONYS. *Comp. Verb.* v. 28 R.

[2] See ATHEN. *ibid.* A list of his writings is given by MÜLLER, *ibid.* p. 466.

[3] See KÖPKE, *De Chamæleonte Peripatetico*, Berl. 1856. Of him also we know but little. He was a native of Heraclea in Pontus

Praxiphanes.[1] Even from the ethical writings of these men, however, nothing has come down to us of a philosophical character.[2] Of a few other disciples of

(ATHEN. iv. 184, d, viii. 338, b, ix. 374, a, &c.), and is probably the same person as he whose courageous answer to king Seleucus is mentioned by MEMNON (*apud* PHOT. *Cod.* 224, p. 626, a). He is described as a Peripatetic by TATIAN, *Ad Gr.* 31, p. 269, a: and the circumstance that his book π. ἡδονῆς was attributed also to Theophrastus (cf. ATHEN. vi. 273, e, viii. 377, e) corroborates that description. From this circumstance KÖPKE (p. 34) concludes that Chamæleon was in fact a pupil of Theophrastus. He may, however, have been his co-disciple, since he (*apud* DIOG. v. 92) criticised his compatriot Heraclides, who was one of Plato's elder pupils (ZELL. *Ph. d. Gr.* i. p. 842, 2) for a plagiarism.—Besides Chamæleon we have also a mention by TATIAN, in the same passage (cf. also ATHEN. xii. 513, b, EUSTATH. in *Il.* α', p. 84, 18, SUID. Ἀθηναίας, and HESYCH. Ἀθηνᾶ), of a Peripatetic named MEGACLIDES (or Metacl.) from whose work on Homer a critical remark is cited.

[1] Described as ἑταῖρος Θεοφράστου, by PROCL. in *Tim.* 6, C. According to this passage he objected to the beginning of the *Timæus*; according to TZETZES, in *Hesiod. Opp. et Di.* v. 1, he considered the introduction to this book as spurious. STRABO, xiv. 2, 13, p. 655, calls him a Rhodian, and EPIPHAN. *Exp. Fid.* 1094, a, adds that his doctrine was in accord with that of Theophrastus. Whether he is the same person as the Praxiphanes described as a Peripatetic and Grammarian, to whom Callimachus dedicated a work (BEKKER'S *Anec.* ii. 729, where, however, our text gives παρ' Ἐξιφάνους; see also ARAT. ed. Buhle, ii. 432), is uncertain (as ZUMPT, *Abh. d. Berl. Akad.* v. J. 1842, *Hist.-phil. Kl.* p. 91, has remarked), inasmuch as CLEM. *Strom.* i. 309, says that a Mytilenean named Praxiphanes was the first person who was called γραμματικός. Nevertheless, it seems probable that it is one and the same person who is intended in all these passages.—A pupil of Praxiphanes, named PLATO, is mentioned by DIOG. iii. 109, and expressly distinguished by him from the other Plato referred to *supra*, vol. ii. p. 466, n. 6.

[2] Of PRAXIPHANES we know nothing at all except what is stated in the text.—Of the eight works of DURIS known to us, the most important were undoubtedly the three historical ones (the *Greek* and *Macedonian Histories*, the *Agathocles*, and the *Samian Chronicles*). Four other works treated of festival plays, of tragedy, of painters, and of sculpture. The work π. νόμων may have been philosophical, but we have from it nothing but two mythological notes.—From Lynceus, who was a writer of comedies and also a *gourmet*, and author of a book on the art of cookery (ATHEN. iv. p. 131–2,

Theophrastus some are known to us only by name,[1] while others hardly merit the title of philosophers.[2]

Much more important as a contributor to philosophy

vi. p. 228 c, vii. p. 313-4; cf. iv. p. 128, a), ATHENÆUS, in his numerous quotations (see the Index to ATHEN. and MÜLLER, *ibid.*), and PLUT. *Demetr.* c. 27, *Schol. Theocr.* to iv. 20, give us only a few notes and stories, chiefly about cookery.—Of the sixteen writings of CHAMÆLEON which KÖPKE, p. 15 sqq., enumerates, twelve related to the epic, lyric, comic, and tragic poets, and were concerned merely with literary history. Only a few unimportant historical remarks have reached us from the Προτρεπτικὸς and the treatises π. μέθης, π. ἡδονῆς, π. Θεῶν (see KÖPKE, p. 36 sqq.: the citations are to be found in ATHENÆUS, *passim*, in CLEMENS ALEX. *Strom.* i. 300 A, in BEKKER, *Anecd.* i. 233, and DIOG. iii. 46).—DEMETRIUS was one of the most fertile authors of the Peripatetic school, and besides the forty-five works of his which DIOG. v. 80 mentions, we hear of others. OSTERMANN (*op. cit.* ii. p. 21 sqq.) and HERWIG (*op.cit.* p.10 sqq.) identify fifty writings, some of them comprising several books; from this list, however, must be withdrawn, in any case, those on the Jews (see *supra*, vol. ii. p. 447, n. 1) and perhaps those on the Egyptians (see OSTERMANN, p. 34). Amongst the genuine writings there were a good many treatises on moral subjects (including the eight Dialogues, which appear to have been of this class), as well as two books on statecraft, and one π. νόμων. There were also historical, grammatical and literary researches, a Rhetoric, a collection of speeches, which Cicero must have known, and another collection of letters. Nevertheless, out of all this mass of literary matter nothing, except a quantity of historical and grammatical scraps and a few insignificant remarks of moral and political interest, has come down to us. (Fr. 6-15, 38-40, 54, OSTERMANN, from DIOG. v. 82, 83; STOB. *Floril.* 8, 20, 12, 18; PLUT. *Cons. ad Apoll.* c. 6, p. 104; DIODOR. *Exc. Vatic.* libr. xxxi., also five in MAI'S *Nova Collect.* ii. 81, POLYB. *Exc.* l. xxx. 3, *ibid.* 434 sq., *Exc.* l. xxxiv.-xxxvii. 2, *ibid.* 444; *ibid.* x. 22, RUTIL. LUPUS, *De Fig. Sent.* i. 1.)

[1] This is so of all the men who are named in the Will of Theophrastus (DIOG. v. 52-3; cf. *supra*, ii. p. 350, n. 5) to succeed Strato in the enjoyment of the ground bequeathed by him for the School, *i.e.* HIPPARCHUS, NELEUS (*supra*, vol. i. p. 137, and p. 139, n. 3), CALLINUS, DEMOTIMUS, DEMARATUS, CALLISTHENES, MELANTHES, PANCREON, NICIPPUS; the same may be said of NICOMACHUS and the three sons of Pythias (cf. *supra*, vol. i. p. 20, n. 3 *ad fin.*, and SEXT. *Math.* i. 258), PROCLES, DEMARATUS, ARISTOTLE; and of Theophrastus's slave, POMPYLUS (DIOG. v. 36).

[2] Like MENANDER, the comic poet, who is also said to have been a pupil of Theophrastus.

is Strato of Lampsacus, the successor of Theophrastus,[1] and the only one of his pupils of whom it is known that he followed out with success the scientific lines laid down by him and by Aristotle.[2] After Theophrastus he is the most distinguished of all the Peripatetics,[3] a

[1] Strato, a native of Lampsacus (DIOG. v. 58, &c., Λαμψακηνὸς is one of the epithets commonly used with his name) was a pupil of Theophrastus (*ibid.* CIC. *Acad.* i. 9, 34, *Fin.* v. 5, 13. SIMPL. *Phys.* 187, a, 225, a, &c.). He succeeded him as chief of the School, held that post for eighteen years, and died (*ibid.* p. 68) in Ol. 127, between 270 and 268 B.C. If, as DIOG. *ibid.* says, he was really the teacher of Ptolemy Philadelphus (who was called to govern along with his father in 285 B.C., and succeeded him on the throne in 283 B.C.) he must have stayed some time at the Egyptian court, to which he may possibly have been invited on the suggestion of Demetrius Phalereus. His letters (or letter) to Arsinoë, Ptolemy's sister and wife (quoted by DIOG. p. 60), would lead us to suppose that such was the case. The story that his princely pupil gave him eighty talents, DIOG. himself tells only with a φασί. His will, however (*apud* DIOG. p. 61 sqq.), shows him to be a wealthy man. He left in his testament the διατριβὴ (the garden and club-house of the School), with all arrangements necessary for the Syssitia, and his library, with the exception of his own MSS., to Lyco; the rest of his property he left to Arcesilaus, a namesake, either a son or a nephew of Strato's father.—For other details, cf. NAUWERCH, *De Stratone Lampsaceno*, Berl. 1836; KRISCHE, *Forschungen &c*, p. 349 sqq.; and see also BRANDIS, iii. p. 394 sqq.

[2] Erasistratus, the celebrated physician, was also considered by many as one of Theophrastus's pupils (DIOG. v. 57; see also GALEN, *Nat. Facult.* ii. 4, vol. ii. 88, 90–1, K., *De Sang. in Arter.* c. 7, vol. iv. 729, as the assertion of the followers of Erasistratus). This is not improbable, but according to GALEN (*Nat. Facult.* ii. 4, *ibid.* in *Hippocr. de Alim.* iii. 14, vol. xv. 307–8, and cf. *De Tremore*, c. 6, vol. vii. 614) his doctrine differed in many ways from that of the Peripatetics. He even affirmed οὐδὲν ὀρθῶς ἐγνωκέναι περὶ φύσεως τοὺς περιπατητικούς. It appears that it is only in the acknowledgment of the complete teleology of nature (whereon cf. GALEN, *Nat. Facult.* ii. 2, vol. ii. 78, 81) that he agreed with them; and even to this he did not always adhere. So far as we know, he never made any independent philosophical researches; see SPRENGEL, *Gesch. d. Arzneik.* 4th. ed.; ROSENBAUM, i. p. 321 sqq.

[3] Cf. following note; and DIOG. v. 58: ἀνὴρ ἐλλογιμώτατος καὶ φυσικὸς ἐπικληθεὶς ἀπὸ τοῦ περὶ τὴν θεωρίαν ταύτην παρ' ὁντινοῦν ἐπιμελέστατα διατετριφέναι. SIMPL. *Phys.* 225, a; τοῖς ἀρίστοις Περι-

position which he merited not only by the extent of his knowledge and his writings, but also still more by the acuteness and independence of his thought, for he surpassed Theophrastus himself in the originality of his scientific labours.[1] His numerous writings, which seem to have aimed rather at the thorough investigation of particular questions than at a systematic and comprehensive treatment of the subject, extend over the whole field of philosophy.[2] But his strong point was the study of

πατητικοῖς ἀριθμούμενος. Even Cicero, who was not at all well disposed to Strato, calls him, in *Fin.* v. 5, 13, '[in physicis] magnus,' and in *Acad.* i. 9, 34 praises his 'acre ingenium.' Nevertheless, his school was not so much frequented as that of Menedemus (of Eretria), as to which STRATO (*apud* PLUT. *Tranqu. An.* 13, p. 472) consoles himself with the remark: τί οὖν θαυμαστὸν, εἰ πλείονές εἰσιν οἱ λούεσθαι θέλοντες τῶν ἀλείφεσθαι βουλομένων;

[1] This independence, of which we shall find several proofs, was also recognised by the ancients; PLUT. *Adv. Col.* 14, 3, p. 1115: τῶν ἄλλων Περιπατητικῶν ὁ κορυφαιότατος Στράτων οὔτ' Ἀριστοτέλει κατὰ πολλὰ συμφέρεται, &c. Pseudo-GALEN, *Hist. Phil.* c. 2, p. 228 K.: ['Ἀριστοτέλης] τὸν Στράτωνα προσήγαγεν εἰς ἴδιόν τινα χαρακτῆρα φυσιολόγως [-ίας]. CIC. (following Antiochus) *Fin.* v. 5, 13, 'nova pleraque;' *Acad.* i. 9. 34, 'In ea ipsa [i.e. in Physics] plurimum discedit a suis.' POLYB. *Exc. Libr.* xii. 25, c. vol. ii. 750 Bekk.: καὶ γὰρ ἐκεῖνος [Στράτων ὁ φυσικὸς] ὅταν ἐγχειρήσῃ τὰς τῶν ἄλλων δόξας διαστέλλεσθαι καὶ ψευδοποιεῖν θαυμάσιός ἐστιν, ὅταν δ' ἐξ αὑτοῦ τι προφέρηται καί τι τῶν ἰδίων ἐπινοημάτων ἐξηγῆται, παρὰ πολὺ φαίνεται τοῖς ἐπιστήμοσιν εὐηθέστερος αὑτοῦ καὶ νωθρότερος — which last statement, however, is difficult to accept as unbiassed.

[2] DIOG. v. 59–60, gives (besides the Letters and the ὑπομνήματα, the authenticity of which was doubted), some forty-four writings, to which may be added the book περὶ τοῦ ὄντος mentioned by PROCL. in *Tim.* 242 sq., and also the π. κινήσεως mentioned by SIMPL. *Phys.* 214, a, and 225, a. His works may be classed as follows: (1) *Logic:* π. τοῦ ὅρου. π. τοῦ προτέρου γένους. π. τοῦ ἰδίου. τόπων προοίμια. (2) *Metaphysics:* π. τοῦ ὄντος. π. τοῦ προτέρου καὶ ὑστέρου (mentioned also by SIMPL. in *Categ.* 106, *a*, 107, *a*, *Schol. in Ar.* 89, a, 40, 90, a, 12). π. τοῦ μᾶλλον καὶ ἧττον. π. τοῦ συμβεβηκότος. π. τοῦ μέλλοντος. π. θεῶν γ'. (3) *Physics:* π. ἀρχῶν γ' (which treated of heat and cold, &c., as physical principles). π. δυνάμεων. π. τοῦ κενοῦ. π. χρόνου. π. κινήσεως. π. μίξεως. π. κούφου καὶ βαρέος. π. τοῦ οὐρανοῦ. π. τοῦ πνεύματος. π. χρωμάτων. π. ζωογονίας. π. τρυφῆς

Nature, which was pursued by him in a spirit which justifies the name, bestowed upon him pre-eminently

καὶ αὐξήσεως. π. ὕπνου. π. ἐνυπνίων. π. αἰσθήσεως. π. ὄψεως. π. τῶν ἀπορουμένων ζῴων. π. τῶν μυθολογουμένων ζῴων. π. φύσεως ἀνθρωπίνης. π. ἐνθουσιασμοῦ. π. νόσων. π. κρίσεων. π. λιμοῦ καὶ σκοτώσεων. (In the case of these three works it is possible that there is a confusion with writings of the physician and follower of Erasistratus presently to be mentioned, but it is to be remembered that Theophrastus himself wrote about vertigo and such subjects.) The λύσεις ἀπορημάτων and the work π. αἰτιῶν appear to have dealt with certain problems of physics; and the book π. τῶν μεταλλικῶν μηχανημάτων also was concerned with the mechanical side of physics. (4) *Ethics:* π. τἀγαθοῦ γ'. π. ἡδονῆς. π. εὐδαιμονίας. π. βίων (if this was not an historical work). π. ἀνδρείας. π. δικαιοσύνης γ'. π. ἀδίκου. π. βασιλείας γ'. π. βασιλέως φιλοσόφου (these two works, especially the latter, may have been written for Ptolemy Philadelphus; it is only COBET, however, who gives the title π. βασ. φιλ., for the earlier texts give π. φιλοσοφίας). There is, moreover, the work εὑρημάτων ἔλεγχοι δύο, which is evidently the same as that which CLEMENS, *Strom.* i. 300, A 308, A (and EUSEB. *Præp. Ev.* x. 6, 6, quoting him) cites by the words ἐν τῷ or ἐν τοῖς περὶ εὑρημάτων. PLIN. *H. Nat.* i.; *Ind. Libri*, vii. ('Stratone qui contra Ephori εὑρήματα scripsit') says it was written against Ephorus (probably, however, against others as well), and this accounts for the title given by Diogenes. Strato wished to correct the opinions of earlier writers on the subject of the origin of the various arts. Besides the above-named works (the authenticity of which cannot, except to a very limited extent, be tested), it would appear from GALEN (*De Venæ Sect. adv. Erasistratum* 2, vol. xi. 151, and *De V. S. adv. Erasistrateos* 2, vol. xi. 197) that we must also refer to this philosopher certain works on medicine, if the Strato named in these passages is in fact the same person. DIOG. v. 61 expressly makes a distinction between the two, and though in this he only follows Demetrius of Magnesia, there is the less reason to doubt his testimony (as ROSE, *De Arist. Lib. Ord.* 174, has done) since the physician Strato is described as a follower of Erasistratus, not only by GALEN (as is clear in the passages already cited and still more clear in *De Puls. Differ.* c. 17, vol. viii. 759), but also by ORIBAS. *Collect.* xlv. 23 (*ap.* MAI, *Class. Auct.* iv. 60), and by EROTIAN (*Lex. Hippocr.* p. 86, Franz); while TERTULLIAN, *De An.* 14, contrasts the views of 'Strato and Erasistratus' with those of Strato the philosopher on the question of the seat of the soul. If, according to DIOG. *ibid.*, the physician was a personal pupil of Erasistratus, he is probably the same as the person whom GALEN, *De Comp. Medic.* iv. 3, vol. xii. 749 calls a Berytian; cf. on this subject SPRENGEL, *Gesch. d. Arzneik.* 4, 559 (ed. 1).

among all the Peripatetics, of 'the Physicist.'[1] What we are told of his contributions to logic and ontology[2] is not very important. On the other hand, the whole difference between his point of view and that of Aristotle becomes at once manifest when we ask how he conceived of the principles of existence and change in the world. Aristotle had referred these to Nature, which in the first instance he conceived as universal efficient cause, but also further described as God or the First Mover, without, however, clearly defining the relation

[1] Examples of the use of this, the commonest description applied to Strato (as to which see generally KRISCHE, *Forsch.* 351), we already have in the notes on p. 451, n. 1, 3, *sup.* Compare also CIC. *Fin.* v. 5, 13: 'primum Theophrasti Strato physicum se voluit, in quo etsi est magnus, tamen nova pleraque et perpauca de moribus.' This CIC. *Acad.* i. 9, 34, says with even less qualification; and he will not allow that Strato should be considered a Peripatetic, partly on this account and partly on account of the variance of his opinions on physics. The list of his writings, however, gives evidence that he did not leave ethics out of account. SENECA states the position more justly when he says of him (*Nat. Qu.* vi. 13, 2): 'hanc partem philosophiæ maxime coluit et rerum naturæ inquisitor fuit.'

[2] We are told by SEXT. *Math.* viii. 13, that he did not, like the Stoics, distinguish between idea, word, and thing (σημαινόμενον, σημαῖνον, τυγχάνον), but only, with Epicurus, between the σημαῖνον and the τυγχάνον, and that thereby he placed truth and error merely in the voice (*i.e.* in the words). The second half of this statement is probably merely a deduction drawn by Sextus; and the first half of it does not accurately reproduce either Strato's expressions or his meaning. Strato is further said to have given as the definition of Being: τὸ ὂν ἐστι τὸ τῆς διαμονῆς αἴτιον, *i.e.* he defined it as the permanent element in things (PROCL. in *Tim.* 242, E). We see further from SIMPL. in *Categ.* 106, a, 107, a sqq. (*Schol. in Ar.* 89, a 37, 90, a, 12 sqq.), that he distinguished various significations of the terms πρότερον and ὕστερον, which SIMPL. *ibid.* takes the trouble to reduce to the five which Aristotle reckons in cap. 12 of the *Categories.* Finally ALEX. *Top.* 173, and ALD. (*Schol.* 281, b, 2) criticise an attempt which Strato had made to amplify an Aristotelian rule (*Top.* iv. 4, 125, a, 5) for ascertaining the relations of subordination between two concepts. It is impossible, however, to discuss the point here.

of these two conceptions to one another.[1] Strato, on the other hand—whether because he recognised the obscurity and fundamental contradiction in the Aristotelian view, or because the whole bent of his thought was opposed to an external supernatural cause—renounced the idea of God as a Being separate and distinct from the world as a whole, and contented himself with 'Nature.' This itself, however, he was unable otherwise to conceive of (agreeing in this with Aristotle[2]) than as a necessary Force operating without consciousness and reflection. He regarded the world, as Plutarch says,[3] as a lifeless whole, and all natural phenomena as the effect of natural necessity. He was convinced with Democritus, in spite of his opposition to his doctrine of Atoms, that the explanation of everything must be found in gravity and motion, and he is accordingly accused by Cicero and others of maintaining that God was unnecessary in the constitution of the world.[4]

[1] See *supra*, vol. i. pp. 388, 420 sqq.

[2] See *supra*, vol. i. p. 464, n. 1.

[3] *Adv. Col.* 14, 3, p. 1115 (*v. sup.* vol. ii. p. 452, n. 1): *οὔτ' Ἀριστοτέλει κατὰ πολλὰ συμφέρεται καὶ Πλάτωνι τὰς ἐναντίας ἔσχηκε δόξας περὶ κινήσεως περὶ νοῦ καὶ περὶ ψυχῆς καὶ περὶ γενέσεως· τελευτῶν [δὲ] τὸν κόσμον αὐτὸν οὐ ζῷον εἶναι φησί, τὸ δὲ κατὰ φύσιν ἕπεσθαι τῷ κατὰ τύχην· ἀρχὴν γὰρ ἐνδιδόναι τὸ αὐτόματον, εἶτα οὕτω περαίνεσθαι τῶν φυσικῶν παθῶν ἕκαστον.* We must guard ourselves against believing Plutarch (as of Democritus, cf. ZELLER, *Ph. d. Gr.* i. 788–9) when he tells us that Strato held chance (*τύχη*) to be the basis of nature. He can only mean that Strato maintained the necessity of nature (*αὐτόματον*); it is Plutarch's own idea to identify this necessity with 'chance,' because both stand equally in antithesis to the teleological conception of nature (cf. *supra*, vol. i. pp. 357 sqq.).

[4] CIC. *Acad.* ii. 38, 121: 'Negas sine Deo posse quidquam, ecce tibi e transverso Lampsacenus Strato, qui det isti Deo immunitatem magni quidem muneris . . . negat opera Deorum se uti ad fabricandum mundum. Quæcunque sint docet omnia esse effecta natura: nec ut ille, qui asperis et lævibus et hamatis uncinatisque corporibus concreta

It would be truer to say that his view identified God with Nature, in which he saw nothing personal, nothing akin to man, but only the universal energy which is the source of all change and becoming in things:[1] and on this ground accurate writers represent him as denying that the Deity has a soul,[2] and holding that the heavens and the earth, in other words the universe, are God.[3]

Passing to his account of natural causes, we find that Strato, as already remarked, was unable, in spite of his naturalism, to reconcile himself to any such mechanical explanation of the world as that of Democritus,[4] partly because he found in it no adequate explanation of phenomena,[5] and partly because he held that indivisible bodies were as inconceivable as an

hæc esse dicat, interjecto inani. Somnia censet hæc esse Democriti, non docentis, sed optantis. Ipse autem singulas mundi partes persequens, quidquid sit aut fiat naturalibus fieri aut factum esse docet ponderibus et motibus.'

[1] The Epicurean in CIC *N. D.* i. 13, 35 says: 'nec audiendus ejus [Theophrasti] auditor Strato, is qui physicus appellatur; qui omnem vim divinam in natura sitam esse censet, quæ causas gignendi augendi minuendi habeat, sed careat omni sensu [consciousness] et figura [*i.e.* the human form of the Epicurean gods].' This is repeated almost word for word by LACTANT. *De Ira, D.* c. 10 *init.* and more concisely by MINUC. FELIX, *Octav.* 19, 9: 'Straton quoque et ipse naturam [sc. Deum loquitur].' So likewise MAX. TYR. i. 17, 5 says that even the atheist has the idea of God. . . . κἂν ὑπαλλάξῃς τὴν φύσιν [even if he puts nature in God's place], ὡς Στράτων.

[2] SENECA *apud* AUGUSTIN. *Civ. D.* vii. 1: 'hoc loco dicet aliquis . . . ego feram aut Platonem aut Peripateticum Stratonem, quorum alter fecit Deum sine corpore, alter sine animo?'

[3] TERTULLIAN, *Adv. Marc.* i. 13: 'Strato cœlum et terram [Deos pronuntiavit].'

[4] *Supra*, vol. ii. p. 455, n. 4.

[5] At any rate this appears to be the meaning of Cicero's 'somnia non docentis sed optantis' (*supra*, vol. ii. p. 455, n. 4): the atoms are a capricious hypothesis, of which it is asserted and hoped, but not proved, that it will explain the facts it was invented to explain.

infinite void.[1] The essential causes consist rather, on his theory, in the properties of things,[2] or more accurately in the active forces that cause these properties.[3] The ultimate properties he further held to be Heat and Cold,[4] which Aristotle had already recognised as the active elements in things,[5] apparently attributing, with Aristotle,[6] the higher reality to that which he considered the primary and positive principle of life and being.[7] The primary substratum of cold he held to be water; of heat, fire or warm vapour.[8] Heat and cold are continually at war; where the one forces an entrance, the other is expelled. This alternation explains, for example, the phenomena of the thunderstorm and the earthquake.[9] Given these corporeal forces,

[1] On both points see further *infra.* The hypothesis of a *vacuum* was dealt with by STRATO (*v. sup.*, vol. ii. p. 452, n. 2) in one of his treatises, presumably directed against Democritus. Whether he went further into the refutation of the Atomistic theory, or contented himself with Aristotle's elaborate criticism, we know not.

[2] SEXT. *Pyrrh.* iii. 33 (and nearly word for word GALEN. *Hist. Phil.* c. 5, p. 244): Στράτων δὲ ὁ φυσικὸς τὰς ποιότητας [ἀρχὴν λέγει]. So also, as FABRICIUS has already remarked, we must in the *Clementine Recognitions*, viii. 15, for 'Callistratus qualitates [sc. principia mundi dixit]' read 'Strato' for 'Callistratus.'

[3] STRATO dealt with this question in the three books π. ἀρχῶν, and perhaps also in the π. δυνάμεων (*supra*, vol. ii. p. 452, n. 3).

[4] STOB. *Ecl.* i. 298: Στράτων στοιχεῖα τὸ θερμὸν καὶ τὸ ψυχρόν. Cf. *infra*, n. 9.

[5] *Supra*, vol. i. p. 480, n. 3.

[6] *Supra*, vol. i. p. 483, n. 2.

[7] EPIPHAN. *Exp. Fid.* 1090 A: Στρατωνίων [l. Στράτων] ἐκ Λαμψάκου τὴν θερμὴν οὐσίαν ἔλεγεν αἰτίαν πάντων ὑπάρχειν.

[8] PLUT. *Prim. Frig.* 9, p. 948: οἱ μὲν Στωϊκοὶ τῷ ἀέρι τὸ πρώτως ψυχρὸν ἀποδιδόντες, Ἐμπεδοκλῆς δὲ καὶ Στράτων τῷ ὕδατι. As to warmth, though positive information fails us, the parallel is self-evident. All this is also Aristotelian; *v. supra*, vol. i. p. 483, n. 2.

[9] SENECA, *Nat. Qu.* vi. 13, 2 (on Earthquakes): 'hujus [Strat.] tale decretum est: Frigidum et calidum semper in contraria abeunt, una esse non possunt. Eo frigidum confluit, unde vis calida discessit, et invicem ibi calidum

Strato found that he could dispense with the incorporeal.[1]

We are not told how Strato connected the primary opposition of heat and cold with the other elementary kinds of opposites, or how he deduced the elements from it; on the latter point he probably followed Aristotle. On the other hand, he combated his views upon gravity. Aristotle assigned to each element its place in the universe according to the direction in which it tended. The earth he accordingly held to be alone absolutely heavy; fire, on the other hand, to be absolutely light; while air and water were relatively heavy and light.[2] Strato, on the other hand, asserted, with Democritus, on the ground of a very simple observation, that all bodies are

est, unde frigus expulsum est.' Wells and pits are therefore warm in the winter, 'quia illo se calor contulit superiora possidenti frigori cedens.' If, then, there is a certain amount of heat accumulated in the earth's interior, and a further quantity of heat, or of cold, is thereupon added under pressure, the excess must find for itself an outlet by force, and thereby earthquakes arise: 'vices deinde hujus pugnæ sunt: defit calori congregatio ac rursus eruptio. Tunc frigora compescuntur et succedunt mox futura potentiora; dum alterna vis cursat et ultro citroque spiritus commeat, terra concutitur.' STOB. *Ecl.* i. 598; Στράτων, θερμοῦ ψυχρῷ παρείξαντος, ὅταν ἐκβιασθὲν τύχῃ, τὰ τοιαῦτα γίγνεσθαι, βροντὴν μὲν ἀπορρύξει, φάει δὲ ἀστραπήν, τάχει δὲ κεραυνόν, πρηστῆρας δὲ καὶ τυφῶνας τῷ πλεονασμῷ τῷ τῆς ὕλης, ἣν ἑκάτερος αὐτῶν ἐφέλκεται, θερμοτέραν μὲν ὁ πρηστήρ, παχυτέραν δὲ ὁ τυφών. Cf. herewith what is said *supra*, vol i. p. 515, n. 2; vol. ii. p. 378, n. 1, as to the theory of ἀντιπερίστασις in Aristotle and Theophrastus.

[1] PLUT. *ibid.*: τὰ αἰσθητὰ ταυτὶ, ἐν οἷς Ἐμπεδοκλῆς τε καὶ Στράτων καὶ οἱ Στωϊκοὶ τὰς οὐσίας τίθενται τῶν δυναμένων, οἱ μὲν Στωϊκοὶ &c. Cf. also what is said on Light and Heat, *infra*, p. 460, n. 2, and see PLUT. *Plac.* v. 4, 3 (GALEN. *H. Phil.* c. 31, p. 322): Στράτων καὶ Δημόκριτος καὶ τὴν δύναμιν [sc. τοῦ σπέρματος] σῶμα· πνευματικὴ γάρ. Strato is as little likely as Democritus to have called a σῶμα a δύναμις; he only affirmed, as the genuine text of Plutarch correctly says, that forces are attached to material things as to their substratum (οὐσία).

[2] *Supra*, vol. i pp. 447–8, 477.

heavy and press towards the centre; and if some of these mount upwards, this is because of the pressure which the heavier exercise upon the lighter.[1] How he further explained this difference of degree in weight—whether he conceived that while everything had weight, yet, on account of the qualitative difference in materials, everything had not the same weight; or whether, with Democritus,[2] he held that all matter was equally heavy, and explained the difference of the specific gravity of bodies by the assumption of empty interspaces within them—we do not know. The views he elsewhere expresses rather support the latter supposition. For while strenuously combating with Aristotle the atomic theory and asserting the infinite divisibility of bodies,[3] he yet agreed with Democritus in assuming the existence of void: while rejecting as indecisive most of the

[1] SIMPL. *De Cœlo*, 121, a, 32 sqq. K., *Schol. in Ar.* 486, a, 5: ὅτι δὲ οὔτε τῇ ὑπ' ἀλλήλων ἐκθλίψει βιαζόμενα κινεῖται [the elements, by movement in their natural positions] δείκνυσιν ['Αριστ.] ἐφεξῆς. ταύτης δὲ γεγόνασι τῆς δόξης μετ' αὐτὸν Στράτων ὁ Λαμψακηνός τε καὶ Ἐπίκουρος, πᾶν σῶμα βαρύτητα ἔχειν νομίζοντες καὶ πρὸς τὸ μέσον φέρεσθαι, τῷ δὲ τὰ βαρύτερα ὑφιζάνειν τὰ ἧττον βαρέα ὑπ' ἐκείνων ἐκθλίβεσθαι βίᾳ πρὸς τὸ ἄνω, ὥστε εἴ τις ὑφεῖλε τὴν γῆν, ἐλθεῖν ἂν τὸ ὕδωρ εἰς τὸ κέντρον, καὶ εἴ τις τὸ ὕδωρ, τὸν ἀέρα, καὶ εἰ τὸν ἀέρα, τὸ πῦρ . . . οἱ δὲ τοῦ πάντα πρὸς τὸ μέσον φέρεσθαι κατὰ φύσιν τεκμήριον κομίζοντες τὸ τῆς γῆς ὑποσπωμένης τὸ ὕδωρ ἐπὶ τὸ κάτω φέρεσθαι καὶ τοῦ ὕδατος τὸν ἀέρα, ἀγνοοῦσι &c. ἰστέον δὲ ὅτι οὐ Στράτων μόνος οὐδὲ Ἐπίκουρος πάντα ἔλεγον εἶναι τὰ σώματα βαρέα καὶ φύσει μὲν ἐπὶ τὸ κάτω φερόμενα παρὰ φύσιν δὲ ἐπὶ τὸ ἄνω, ἀλλὰ καὶ Πλάτων οἶδε φερομένην τὴν δόξαν καὶ διελέγχει. STOB. *Ecl.* i. 348: Στράτων μὲν προσεῖναι τοῖς σώμασι φυσικὸν βάρος, τὰ δὲ κουφότερα τοῖς βαρυτέροις ἐπιπολάζειν οἷον ἐκπυρηνιζόμενα.

[2] ZELL. *Ph. d. Gr.* i. 779.

[3] *Supra*, vol. ii. p. 455, n. 4, and SEXT. *Math.* x. 155: καὶ δὴ οὕτως ἠνέχθησαν οἱ περὶ τὸν Στράτωνα τὸν φυσικόν· τοὺς μὲν γὰρ χρόνους εἰς ἀμερὲς ὑπέλαβον καταλήγειν, τὰ δὲ σώματα καὶ τοὺς τόπους εἰς ἄπειρον τέμνεσθαι, κινεῖσθαί τε τὸ κινούμενον ἐν ἀμερεῖ χρόνῳ ὅλον ἄθρουν μεριστὸν διάστημα καὶ οὐ περὶ τὸ πρότερον πρότερον. Cf. *infra*, p. 462, n. 2.

reasons adduced in support of this assumption,[1] he yet believed it impossible to explain many phenomena—as for instance those of light and heat—except on the presupposition of empty interspaces into which light and caloric may find an entrance.[2] Since, however, this only proves the existence of empty spaces within the material world, and since his definition of space, which resembled Aristotle's,[3] excluded the conception of a

[1] The three reasons for the assumption of a vacuum, which ARISTOTLE reckons in *Phys.* iv. 6, 213 (cf. *supra*, vol. i. p. 434), Strato (according to SIMPL. *Phys.* 153, a) reduced to two, εἴς τε τὴν κατὰ τόπον κίνησιν καὶ εἰς τὴν τῶν σωμάτων πίλησιν [*i.e.* that no movement in space and no condensation would be possible without a void]; τρίτον δὲ προστίθησι τὸ ἀπὸ τῆς ὁλκῆς· τὴν γὰρ σιδηρῖτιν λίθον ἕτερα σιδήρια δι' ἑτέρων ἕλκειν συμβαίνει (as SIMPL. further explains). He cannot, however, have found that any of these arguments was convincing, for we find that as to the first of them SIMPL. 154, b, after citing the examples with which Aristotle had confuted it, goes on to remark: 'still more striking is the refutation which Strato brings against it—namely, that a small stone in a closed vessel filled with water will move towards the mouth when one turns the vessel round.' So again, as to the third argument, SIMPL. says in 155, b: ὁ δὲ Στράτων καὶ τὸν ἀπὸ τῆς ἕλξεως [sc. λόγον] ἀναλύων· οὐδὲ ἡ ἕλξις, φησὶν, ἀναγκάζει τίθεσθαι τὸ κενόν. οὔτε γὰρ εἰ ἔστιν ὅλως ἕλξις φανερὸν. ὅτε καὶ Πλάτων αὐτὸς τὴν ἑλκτικὴν δύναμιν ἀναιρεῖν δοκεῖ. οὔτε, εἰ ἔστιν ἕλξις, δῆλον. εἰ διὰ τὸ κενὸν ἡ λίθος ἕλκει καὶ μὴ δι' ἄλλην αἰτίαν. οὐδὲ γὰρ ἀποδεικνύουσιν, ἀλλ' ὑποτίθενται τὸ κενὸν οἱ οὕτω λέγοντες. These arguments, as well as the other remarks we find in SIMPL. on this subject, must be directly or indirectly derived from STRATO's book π. κενοῦ.

[2] SIMPL. *Phys.* 163, b: ὁ μέντοι Λαμψακηνὸς Στράτων δεικνύναι πειρᾶται, ὅτι ἔστι τὸ κενὸν διαλαμβάνον τὸ πᾶν σῶμα ὥστε μὴ εἶναι συνεχὲς, λέγων ὅτι οὐκ ἂν δι' ὕδατος ἢ ἀέρος ἢ ἄλλου σώματος ἐδύνατο διεκπίπτειν τὸ φῶς οὐδὲ ἡ θερμότης οὐδὲ ἄλλη δύναμις οὐδεμία σωματική. πῶς γὰρ αἱ τοῦ ἡλίου ἀκτῖνες διεξέπιπτον εἰς τὸ τοῦ ἀγγείου ἔδαφος; εἰ γὰρ τὸ ὑγρὸν μὴ εἶχε πόρους, ἀλλὰ βίᾳ διέστελλον αὐτὸ αἱ αὐγαὶ, συνέβαινεν ὑπερεκχεῖσθαι τὰ πλήρη τῶν ἀγγείων, καὶ οὐκ ἂν αἱ μὲν τῶν ἀκτίνων ἀνεκλῶντο πρὸς τὸν ἄνω τόπον αἱ δὲ κάτω διεξέπιπτον. From this passage we also gather that Strato, even more definitely than Aristotle, considered light and heat to be material.

[3] STOB. *Ecl.* i. 380: τόπον δὲ εἶναι [according to Strato] τὸ μεταξὺ διάστημα τοῦ περιέχοντος καὶ τοῦ περιεχομένου—which differs

space outside the world, Strato confined the existence of void to the world itself, and rejected the view of Democritus that there is an infinite void outside our world.[1] On time,[2] likewise, he held views different from his predecessors. Aristotle's definition of time as number or count of movement appeared to him to be false. Number, he remarked, is a discontinuous, time and motion are continuous quantities, which cannot, therefore, be counted. Time is continually beginning and ending; with number this is not the case. The parts of number exist simultaneously; this is never so with portions of time. If time is number, present

from the Aristotelian definition (*supra*, vol. i. p. 432, n. 4) only in the circumstance that the latter assigned the inner boundary of the surrounding bodies as the space which the surrounded body occupies, whereas Strato, who allowed that bodies were separated by a void, considered the void between the surrounding and the surrounded bodies as the space of the latter.

[1] STOB. *ibid.*: Στράτων ἐξωτέρω μὲν ἔφη τοῦ κόσμου μὴ εἶναι κενὸν, ἐνδοτέρω δὲ δυνατὸν γενέσθαι. From the same source, as it appears, we have in THEODORET, *Cur. Gr. Aff.* iv. 14, p. 58: ὁ δὲ Στράτων ἔμπαλιν [sc. ἢ οἱ Στωϊκοί], ἔξωθεν μὲν μηδὲν εἶναι κενὸν, ἔνδοθεν δὲ δυνατὸν εἶναι. Herewith, and with n. 2 on p. 460, agrees SIMPL. *Phys.* 144, b: some hold the χωρητικὸν to be unbounded, as did Democritus, οἱ δὲ ἰσόμετρον αὐτὸ τῷ κοσμικῷ σώματι ποιοῦσι, καὶ διὰ τοῦτο τῇ μὲν ἑαυτοῦ φύσει κενὸν εἶναι λέγουσι, πεπληρῶσθαι δὲ αὐτὸ σωμάτων ἀεὶ καὶ μόνῃ γε τῇ ἐπινοίᾳ θεωρεῖσθαι ὡς καθ' αὑτὸ ὑφεστὼς, οἷοί τινες οἱ πολλοὶ τῶν Πλατωνικῶν φιλοσόφων γεγόνασι, καὶ Στράτωνα δὲ οἶμαι τὸν Λαμψακηνὸν τῆς τοιαύτης γενέσθαι δόξης. For SIMPL., it will be observed, does not absolutely ascribe this view to Strato; and, besides, he is in this passage dealing only with the proposition that Space is entirely occupied by the body of the world, which excludes the notion of an exterior void, but not the possibility of smaller interior vacua. But SIMPL. is inaccurate when, at 140, b, he says that 'some believe that space is to be found without matter, as Democritus and Epicurus: οἱ δὲ διάστημα καὶ ἀεὶ σῶμα ἔχον καὶ ἐπιτήδειον πρὸς ἕκαστον, ὡς . . . ὁ Λαμψακηνὸς Στράτων. The empty spaces *inside* bodies are here ignored.

[2] Which subject, as well as that of 'the vacuum,' he treated in a separate work; *supra*, vol. ii. p. 452, n. 2.

time and unity must be the same. Why, finally, should time, as the measure of earlier and later, refer only to motion and not equally to rest, to which earlier and later also apply?[1] He himself defined time as amount of activity,[2] the quantity or amount of motion and rest;[3] he carefully distinguished[4] between time and that which is in time,[5] and accordingly refused to admit that days, years, &c., are portions of time: they correspond rather to real and definite events, whereas time

[1] See SIMPL. *Phys.* 187, a, for a detailed account of these objections. Strato also remarked, as is observed in the latter part of the same passage, that if 'ἐν χρόνῳ εἶναι' = 'ὑπὸ τοῦ χρόνου περιέχεσθαι,' then Eternity is not in time. SIMPL. goes on as in next note.

[2] SIMPL. 187, a: καὶ ἄλλα δὲ πολλὰ ἀντειπὼν πρὸς τὴν Ἀριστοτέλους ἀπόδοσιν ὁ Στράτων αὐτὸς τὸν χρόνον τὸ ἐν ταῖς πράξεσι ποσὸν εἶναι τίθεται. πολὺν γάρ, φησί, χρόνον φαμὲν ἀποδημεῖν καὶ πλεῖν καὶ στρατεύεσθαι καὶ πολεμεῖν, ὁμοίως δὲ καθῆσθαι καὶ καθεύδειν καὶ μηθὲν πράττειν, καὶ πολὺν χρόνον φαμὲν καὶ ὀλίγον, ὧν μὲν ἔστι τὸ ποσὸν πολὺ, πολὺν χρόνον, ὧν δὲ ὀλίγον, ὀλίγον· χρόνος γὰρ τὸ ἐν ἑκάστοις τούτων ποσόν. We have a similar definition of Time from Speusippus, if the statement in ZELL. *Ph. d. Gr.* i. 859, n. 4 is correct.

[3] STOB. *Ecl.* i. 250: Στράτων [τὸν χρόνον] τῶν ἐν κινήσει καὶ ἠρεμίᾳ ποσόν. SEXT. *Pyrrh.* iii. 137 (*Math.* x. 128): Στράτων δὲ, ἢ ὥς τινες Ἀριστοτέλης [χρόνον φησὶν εἶναι] μέτρον κινήσεως καὶ μονῆς. *Math.* x. 177: Στράτων ὁ φυσικὸς . . . . ἔλεγεν χρόνον ὑπάρχειν μέτρον πάσης κινήσεως καὶ μονῆς· παρήκει γὰρ πᾶσι τοῖς κινουμένοις ὅτε κινεῖται καὶ πᾶσι τοῖς ἀκινήτοις ὅτε ἀκινητίζει. καὶ διὰ τοῦτο πάντα τὰ γινόμενα ἐν χρόνῳ γίνεται.

[4] SIMPL. 187, a, Strato discusses the concepts of the ταχὺ and βραδὺ, and says the former is ἐν ᾧ τὸ μὲν ποσὸν, ἀφ' οὗ ἤρξατο καὶ εἰς ὃ ἐπαύσατο, ὀλίγον, τὸ δὲ γεγονὸς ἐν αὐτῷ πολὺ, and the latter the opposite, ὅταν ᾖ τὸ μὲν ποσὸν ἐν αὐτῷ πολὺ, τὸ δὲ πεπραγμένον ὀλίγον. In rest we have no such distinctions, and so in a state of rest time is neither quick nor slow, but only greater or less; for it is only action and motion, not the ποσὸν, ἐν ᾧ ἡ πρᾶξις, which can be faster or slower.

[5] Or more correctly, that in which time is; for in SIMPL. 187, b, d, he expressly says: διὰ τοῦτο δὲ πάντα ἐν χρόνῳ εἶναι φαμὲν, ὅτι πᾶσι τὸ ποσὸν ἀκολουθεῖ καὶ τοῖς γινομένοις καὶ τοῖς οὖσιν. In such a case we use the word 'in' conversely (κατὰ τὸ ἐναντίον), as when we say, 'the town is in confusion,' or 'mankind in terror,' ὅτι ταῦτα ἐν ἐκείνοις.

is only the duration of these events.[1] The statement that time according to Strato consists of indivisible *minima*, and that motion does not proceed continuously in these several portions of time, but completes itself moment by moment,[2] seems to rest upon a misapprehension.[3] Strato had shown in a more comprehensive fashion than Aristotle that motion,[4] like space and time, is continuous.[5] The seat of motion, especially in

[1] SIMPL. 187, b: ἡμέρα δὲ καὶ νὺξ, φησὶ [add. καὶ μὴν] καὶ ἐνιαυτὸς οὐκ ἔστι χρόνος οὐδὲ χρόνου μέρη, ἀλλὰ τὰ μὲν ὁ φωτισμὸς καὶ ἡ σκίασις, τὰ δὲ ἡ τῆς σελήνης καὶ ἡ τοῦ ἡλίου περίοδος, ἀλλὰ χρόνος ἐστὶ τὸ ποσὸν ἐν ᾧ ταῦτα. (What follows is not from Strato, as BRANDIS, iii. 403, affirms, but rather a criticism of his view by SIMPL.) On the other hand, we must not conclude from SIMPL. *ibid.* 189, b (ἐκ δὲ τούτων τῶν λύσεων καὶ τὰς τοῦ Στράτωνος ἀπορίας περὶ τοῦ μὴ εἶναι τὸν χρόνον διαλύειν δυνατὸν) that Strato denied the reality of time; he simply brings forward this *aporia* in the same sense as Aristotle himself had done in *Phys.* iv. 10 *init.*

[2] SEXTUS, *sup.* vol. ii. p. 452, n. 1.

[3] Strato expressly says, *apud* SIMPL. *Phys.* 187, a, that time cannot be the number of motion, διότι ὁ μὲν ἀριθμὸς διωρισμένον ποσὸν ἡ δὲ κίνησις καὶ ὁ χρόνος συνεχής· τὸ δὲ συνεχὲς οὐκ ἀριθμητόν. On the continuity of motion, more will be found *infra.* Probably Strato only repeated the teaching already worked out by Aristotle (*supra*, vol. i. p. 439, n. 2; p. 417, and *Phys.* i. 3, 186, a, 15) as to the indivisibility of the present and the ἀθρόα μεταβολή.

[4] On this also Strato wrote a separate book.

[5] SIMPL. *Phys.* 168, a: ὁ δὲ Λαμψακηνὸς Στράτων οὐκ ἀπὸ τοῦ μεγέθους μόνον συνεχῆ τὴν κίνησιν εἶναι φησὶν, ἀλλὰ καὶ καθ' ἑαυτὴν, ὡς, εἰ διακοπείη [if it were *not* continuous], στάσει διαλαμβανομένη (l.-νην), καὶ τὸ μεταξὺ δύο διαστάσεων (l. στάσεων) κίνησιν οὖσαν ἀδιάκοπον. 'καὶ ποσὸν δέ τι, φησὶν, ἡ κίνησις καὶ διαιρετὸν εἰς ἀεὶ διαιρετά.' What follows is not derived from Strato, but is an explanation of the Aristotelian text, as is shown by the words: ἀλλὰ πῶς εἶπεν [i.e. ARIST. *Phys.* iv. 11, 219, a, 13] ὅση γὰρ ἡ κίνησις, &c. It is not until the end of this section, *i.e.* in the middle of 168, a, that SIMPL. returns to Strato with the words: ἀλλ' ὁ μὲν Ἀριστοτέλης ἔοικεν ἐκ τοῦ σαφεστέρου ποιήσασθαι τὴν ἐπιβολήν· ὁ δὲ Στράτων φιλοκάλως καὶ αὐτὴν καθ' αὑτὴν τὴν κίνησιν ἔδειξε τὸ συνεχὲς ἔχουσαν, ἴσως καὶ πρὸς τοῦτο βλέπων, ἵνα μὴ μόνον ἐπὶ τῆς κατὰ τόπον κινήσεως, ἀλλὰ καὶ ἐπὶ τῶν ἄλλων πασῶν συνάγηται τὰ λεγόμενα.

qualitative change, he sought for, not only in the material that is moved, but also in that which ceases and that which comes into being with the motion.[1] He corroborated the theory of the acceleration of motion by simple observations of the fall of bodies.[2]

A fundamental departure from the Aristotelian cosmology is attributed to Strato by Stobæus, who tells us that he held that the heavens are made of fire, and that the stellar radiance is a reflection of the sun's light.[3] As to the former of these doctrines we may wonder that it is nowhere else mentioned, as it in reality involves nothing less than the abandonment of the theory of the ether and all the deductions founded upon it; yet we are not therefore justified in denying that the difficulties which beset the Aristotelian assumptions as to the light- and heat-giving power of the stars[4] may have caused Strato to attribute a fiery instead of an etherial nature to heaven and the heavenly bodies. Nor need the statement as to the light of the stars cause us any serious difficulty in view of the state of astronomy at that time. Yet the evidence of Stobæus gives us no sure guarantee of the truth of these statements.[5] The assertion that Strato conceived

[1] SIMPL. 191, a (referring to *Phys.* v. 1): καὶ καλῶς γε, οἶμαι, ὁ Στράτων τὴν κίνησιν οὐ μόνον ἐν τῷ κινουμένῳ φησὶν εἶναι, ἀλλὰ καὶ ἐν τῷ ἐξ οὗ καὶ ἐν τῷ εἰς ὃ, ἄλλον δὲ τρόπον ἐν ἑκάστῳ. τὸ μὲν γὰρ ὑποκείμενον, φησὶ, κινεῖται ὡς μεταβάλλον, τὸ δὲ ἐξ οὗ καὶ τὸ εἰς ὃ, τὸ μὲν ὡς φθειρόμενον, τὸ δὲ ὡς γινόμενον. On the corresponding definitions of Aristotle, see vol. i. p. 417, n. 2, *supra*.

[2] See the Fragm. of the book π. κινήσεως *apud* SIMPL., *ibid.* 214, a.

[3] *Ecl.* i. 500: Παρμενίδης, Ἡράκλειτος, Στράτων, Ζήνων πύρινον εἶναι τὸν οὐρανόν. I. 518: Στράτων καὶ αὐτὸς τὰ ἄστρα ὑπὸ τοῦ ἡλίου φωτίζεσθαι.

[4] *Supra*, vol. i. p. 509 sq.

[5] In the first place what Strato says only of the fiery sphere could not be transferred to

of the parts of the world as infinite[1] is obviously untrue, if this involves, as it appears to do, the infinite extension of the world in space.[2] Other reported doctrines of Strato relating to the fixity of the earth,[3] comets,[4] meteorological phenomena and earthquakes,[5] the formation of seas,[6] to colours[7] and sounds,[8] cannot be fully discussed here.

the heavens; and, in the second place, that which related only to the planets cannot be extended to all the stars.

[1] EPIPHAN. *Exp. Fid.* 1090, A: ἄπειρα δὲ ἔλεγεν εἶναι τὰ μέρη τοῦ κόσμου.

[2] For this view was not held by Strato, as shown *supra*, p. 461, n. 1. The statement is probably only a misinterpretation of his teaching as to the unlimited divisibility of matter, as to which see *supra*, p. 459, n. 3.

[3] That Strato (like Aristotle) held this view, and that he supported it by a special argument of his own, appears from CRAMER, *Anecd. Oxon.* iii. 413: τῇ δὲ προμένῃ [l. προκειμένῃ] νῦν αἰτιολογίᾳ τῇ περὶ τῆς ἀκινησίας τῆς γῆς Στράτων δοκεῖ πρῶτος ὁ φυσικὸς χρήσασθαι. The argument unfortunately is not given.

[4] STOB. *Ecl.* i. 578 (PLUT. *Plac.* iii. 2, 5; GALEN, *H. Phil.* 18, p. 286). A comet according to Strato was: ἄστρου φῶς περιληφθὲν νέφει πυκνῷ, καθάπερ ἐπὶ τῶν λαμπτήρων γίνεται.

[5] See *supra*, vol. ii. p. 457, n. 9.

[6] According to STRABO, i, 3, 4, p. 49 (from ERATOSTHENES, who, however, without doubt is only quoting Strato as far as the words, on p. 50, τὴν Σκυθῶν ἐρημίαν; the rest is his own), Strato propounded the hypothesis, which he justified by palæontological observations, that the Black Sea was originally separated from the Mediterranean, and this sea from the Atlantic, by isthmuses, which were broken through in course of time.

[7] As to this, the excerpts from JOHAN. DAMASC. i. 17, 3 (STOB. *Floril.* iv. 173, ed. Meineke) give us only the not very clear remark: Στράτων χρώματά φησιν ἀπὸ τῶν σωμάτων φέρεσθαι συγχρῴζοντ' αὐτοῖς τὸν μεταξὺ ἀέρα.

[8] ALEX. APHR. *De Sensu*, 117 (p. 265, 9 sqq., ed. Thurot), intimates that Strato explained the fact that it is impossible to distinguish tones at a great distance—not, like Aristotle (*De Sensu*, 6, 446, b, 6) by the theory that the form of movement in the air was altered on the way—but τῷ ἐκλύεσθαι τὸν τόνον τῆς πληγῆς . . . . οὐ γάρ φησιν ἐν τῷ σχηματίζεσθαί πως τὸν ἀέρα τοὺς διαφόρους φθόγγους γίνεσθαι, ἀλλὰ τῇ τῆς πληγῆς ἀνισότητι. (What follows is not the view of Strato, but of Alexander, as THUROT reminds us at p. 451 of his edition.) These words harmonise exactly with the beginning of the pseudo-Aristotelian fragment π. ἀκουστῶν, 800, a, 1: τὰς δὲ φωνὰς ἁπάσας

Upon his physiological views also we have only isolated and unimportant statements.[1] His doctrine of

συμβαίνει γίγνεσθαι καὶ τοὺς ψόφους . . . . οὐ τῷ τὸν ἀέρα σχηματίζεσθαι, καθάπερ οἴονταί τινες, ἀλλὰ τῷ κινεῖσθαι παραπλησίως αὐτὸν συστελλόμενον καὶ ἐκτεινόμενον, &c. This coincidence, however, does not go far enough to justify the supposition (BRANDIS, ii. b, 1201) that that treatise is the work of Strato, however well and carefully considered, and however worthy of him it may appear. It is not, therefore, necessary here to go into the manner in which the tones of the human voice and of musical instruments and their various modifications are in that tract explained. The general basis of the theory is most clearly set out at p. 803, b, p. 34 sqq. According to this passage, which reminds one of Heraclides's theory (ZELLER, *Ph. d. Gr.* i. p. 887, 1) every sound is composed of particular beating vibrations (πληγαί), which we cannot distinguish as such, but perceive as one unbroken sound; high tones, whose movement is quicker, consist of more vibrations, and low tones of fewer. Several tones vibrating and ceasing at the same time are heard by us as one tone. The height or depth, harshness or softness, and in fact every quality of a tone depends (803, b, 26) on the quality of the motion originally created in the air by the body that gave out the tone. This motion propagates itself unchanged, inasmuch as each portion of the air sets the next portion of air in motion with the same movement as it has itself.

[1] GALEN, *De Sem.* ii. 5, vol. iv. 629, informs us that Strato explained the origin of the difference of the sexes (*supra*, vol. ii. p. 55, n. 2) in a somewhat more material manner than Aristotle (without, however, adopting the views of Democritus, *d. q. v.* ZELL. *Ph. d. Gr.* i. 805, 2), by the theory that either the male seed has the preponderance over the female (which Aristotle would not admit, *supra*, vol. ii. p. 50 sq.) or the female over the male. According to PLUT. *Plac.* v. 8, 2 (GALEN, *H. Phil.* 32, p. 325), he allowed that abortions originated παρὰ πρόσθεσιν, ἢ ἀφαίρεσιν, ἢ μετάθεσιν [misplacement of parts] ἢ πνευμάτωσιν [evaporation, or perhaps addling of the seed caused by air contained therein]. Finally in JAMBLICH. *Theol. Arithm.* p. 47 (which MACROB. *Somn. Scip.* 1, 6, 65, repeats; cf. also CENSORIN. *Di. Nat.* 7, 5) we have his views on the first stages of the development of the embryo week by week.—Similar opinions on this subject are also attributed to the physician Diocles, of Carystus, who, according to AST'S notes on the *Theol. Arithm.*, flourished about Ol. 136 (*i.e.* about 232 B.C.), and who, according to IDELER, *Arist. Meteorol.* i. 157, was a pupil of Strato's, and one of the persons charged (see DIOG. v. 62) with the execution of his testament. SPRENGEL, however (*Gesch. d. Arzneik.* fourth edition, p. 463), believes him to have

the human soul,[1] on the other hand, owing to its divergence from that of Aristotle, claims our attention. That he should adopt an independent view was to be expected from what we already know of his general theory as to the efficient forces of the world. If these in general are inseparable from matter, this must be true also of the powers of the soul. While it does not follow from this that Strato must necessarily have explained the soul, with Aristoxenus and Dicæarchus, as the harmony of the body,[2] yet he could not admit Aristotle's doctrine that it is motionless, and that a part of it is separate from all other parts and from the body. All activities of the soul, he asserts still more emphatically than Theophrastus,[3] are movements—thought, as well as perception—since they all consist in the action of a hitherto inactive force; and in proof of the view that between the activity of sense and reason there is in this respect no essential difference, he appealed to the fact which had been already observed by Aristotle,[4] that we

been of an earlier date, and rightly; for even if it be true, as is alleged without proof, that 'he lived a short time after Hippocrates,' nevertheless GALEN (in his *Aphorisms*, vol. xviii. α, 7) expressly counts him amongst the predecessors of Erasistratus; and what we know of his views (SPRENGEL, *ibid.*) confirms this.

[1] Which subject he treated in the works π. φύσεως ἀνθρωπίνης and π. αἰσθήσεως.

[2] OLYMPIODOR. *Schol. in Phædon.*, p. 142, does indeed say: ὅτι ὡς ἁρμονία ἁρμονίας ὀξυτέρα καὶ βαρυτέρα, οὕτω καὶ ψυχὴ ψυχῆς, φησὶν ὁ Στράτων, ὀξυτέρα καὶ νωθεστέρα. Whether he really meant to show that the soul is a harmony, or whether this remark is only meant to serve as an argument against the Platonic objection (*Phæd.* 92 E sqq.), or, finally, whether the phrase merely belonged to the statement of someone else's opinion, we do not learn. TERTULL. *De An.* 15, distinguishes Strato's view from that of Dicæarchus, and we shall see that he is right.

[3] *Supra*, vol. ii. p. 391, n. 2.

[4] *Supra*, vol. i p. 195, n. 1, and p. 206, n. 2.

Upon his physiological views also we have only isolated and unimportant statements.[1] His doctrine of

συμβαίνει γίγνεσθαι καὶ τοὺς ψόφους . . . . οὐ τῷ τὸν ἀέρα σχηματίζεσθαι, καθάπερ οἴονταί τινες, ἀλλὰ τῷ κινεῖσθαι παραπλησίως αὐτὸν συστελλόμενον καὶ ἐκτεινόμενον, &c. This coincidence, however, does not go far enough to justify the supposition (BRANDIS, ii. b, 1201) that that treatise is the work of Strato, however well and carefully considered, and however worthy of him it may appear. It is not, therefore, necessary here to go into the manner in which the tones of the human voice and of musical instruments and their various modifications are in that tract explained. The general basis of the theory is most clearly set out at p. 803, b, p. 34 sqq. According to this passage, which reminds one of Heraclides's theory (ZELLER, *Ph. d. Gr.* i. p. 887, 1) every sound is composed of particular beating vibrations (πληγαί), which we cannot distinguish as such, but perceive as one unbroken sound; high tones, whose movement is quicker, consist of more vibrations, and low tones of fewer. Several tones vibrating and ceasing at the same time are heard by us as one tone. The height or depth, harshness or softness, and in fact every quality of a tone depends (803, b, 26) on the quality of the motion originally created in the air by the body that gave out the tone. This motion propagates itself unchanged, inasmuch as each portion of the air sets the next portion of air in motion with the same movement as it has itself.

[1] GALEN, *De Sem.* ii. 5, vol. iv. 629, informs us that Strato explained the origin of the difference of the sexes (*supra*, vol. ii. p. 55, n. 2) in a somewhat more material manner than Aristotle (without, however, adopting the views of Democritus, *d. q. v.* ZELL. *Ph. d. Gr.* i. 805, 2), by the theory that either the male seed has the preponderance over the female (which Aristotle would not admit, *supra*, vol. ii. p. 50 sq.) or the female over the male. According to PLUT. *Plac.* v. 8, 2 (GALEN, *H. Phil.* 32, p. 325), he allowed that abortions originated παρὰ πρόσθεσιν, ἢ ἀφαίρεσιν, ἢ μετάθεσιν [misplacement of parts] ἢ πνευμάτωσιν [evaporation, or perhaps addling of the seed caused by air contained therein]. Finally in JAMBLICH. *Theol. Arithm.* p. 47 (which MACROB. *Somn. Scip.* 1, 6, 65, repeats; cf. also CENSORIN. *Di. Nat.* 7, 5) we have his views on the first stages of the development of the embryo week by week.—Similar opinions on this subject are also attributed to the physician Diocles, of Carystus, who, according to AST'S notes on the *Theol. Arithm.*, flourished about Ol. 136 (*i.e.* about 232 B.C.), and who, according to IDELER, *Arist. Meteorol.* i. 157, was a pupil of Strato's, and one of the persons charged (see DIOG. v. 62) with the execution of his testament. SPRENGEL, however (*Gesch. d. Arzneik.* fourth edition, p. 463), believes him to have

the human soul,[1] on the other hand, owing to its divergence from that of Aristotle, claims our attention. That he should adopt an independent view was to be expected from what we already know of his general theory as to the efficient forces of the world. If these in general are inseparable from matter, this must be true also of the powers of the soul. While it does not follow from this that Strato must necessarily have explained the soul, with Aristoxenus and Dicæarchus, as the harmony of the body,[2] yet he could not admit Aristotle's doctrine that it is motionless, and that a part of it is separate from all other parts and from the body. All activities of the soul, he asserts still more emphatically than Theophrastus,[3] are movements—thought, as well as perception—since they all consist in the action of a hitherto inactive force; and in proof of the view that between the activity of sense and reason there is in this respect no essential difference, he appealed to the fact which had been already observed by Aristotle,[4] that we

been of an earlier date, and rightly; for even if it be true, as is alleged without proof, that 'he lived a short time after Hippocrates,' nevertheless GALEN (in his *Aphorisms*, vol. xviii. *a*, 7) expressly counts him amongst the predecessors of Erasistratus; and what we know of his views (SPRENGEL, *ibid.*) confirms this.

[1] Which subject he treated in the works π. φύσεως ἀνθρωπίνης and π. αἰσθήσεως.

[2] OLYMPIODOR. *Schol. in Phædon.*, p. 142, does indeed say: ὅτι ὡς ἁρμονία ἁρμονίας ὀξυτέρα καὶ βαρυτέρα, οὕτω καὶ ψυχὴ ψυχῆς, φησὶν ὁ Στράτων, ὀξυτέρα καὶ νωθεστέρα. Whether he really meant to show that the soul is a harmony, or whether this remark is only meant to serve as an argument against the Platonic objection (*Phæd.* 92 E sqq.), or, finally, whether the phrase merely belonged to the statement of someone else's opinion, we do not learn. TERTULL. *De An.* 15, distinguishes Strato's view from that of Dicæarchus, and we shall see that he is right.

[3] *Supra*, vol. ii. p. 391, n. 2.

[4] *Supra*, vol. i. p. 195, n. 1, and p. 206, n. 2.

are unable to think anything of which we have had no previous perception.[1] But, on the other hand, he remarked that perception and sensation are conditioned by thought, since often when we are thinking of something else the impressions which our senses have received fail to rise into consciousness.[2] In general, however, the soul and not the body is the seat of sensation; for when we believe ourselves to feel a pain in the part affected, this is merely the same delusion as when we think that we hear sounds outside, whereas in reality we apprehend them only in the ear. Pain is caused by the sudden transmission of the external impression from the part affected to the soul; if the connection is broken we feel no pain.[3] Strato accord-

[1] SIMPL. *Phys.* 225, a: καὶ Στράτων δὲ . . . τὴν ψυχὴν ὁμολογεῖ κινεῖσθαι οὐ μόνον τὴν ἄλογον, ἀλλὰ καὶ τὴν λογικήν, κινήσεις λέγων εἶναι τὰς ἐνεργείας τῆς ψυχῆς, λέγει οὖν ἐν τῷ περὶ Κινήσεως πρὸς ἄλλοις πολλοῖς καὶ τάδε· 'ἀεὶ γὰρ ὁ νοῶν κινεῖται, ὥσπερ καὶ ὁ ὁρῶν καὶ ἀκούων καὶ ὀσφραινόμενος· ἐνέργεια γὰρ ἡ νόησις τῆς διανοίας καθάπερ καὶ ἡ ὅρασις τῆς ὄψεως' [he means that both are δυνάμει ὄντος ἐνέργειαι, movements]. καὶ πρὸ τούτου δὲ τοῦ ῥητοῦ γέγραφεν· 'ὅτι οὖν εἰσιν αἱ πλεῖσται τῶν κινήσεων αἴτιαι, ἃς ἡ ψυχὴ καθ' αὑτὴν κινεῖται διανοουμένη καὶ ἃς ὑπὸ τῶν αἰσθήσεων ἐκινήθη πρότερον, δῆλόν ἐστιν. ὅσα γὰρ μὴ πρότερον ἑώρακε ταῦτα οὐ δύναται νοεῖν, οἷον τόπους ἢ λιμένας ἢ γραφὰς ἢ ἀνδριάντας ἢ ἀνθρώπους ἢ τῶν ἄλλων τι τῶν τοιούτων.' The words ὅτι οὖν—αἴτιαι are more or less incomprehensible, as we do not know the context.

[2] PLUT. *Solert. An.* 3, 6, p. 961 (and from him PORPH. *De Abst.* iii. 24): καίτοι Στράτωνός γε τοῦ φυσικοῦ λόγος ἐστὶν ἀποδεικνύων, ὡς οὐδ' αἰσθάνεσθαι τοπαράπαν ἄνευ τοῦ νοεῖν ὑπάρχει· καὶ γὰρ γράμματα πολλάκις ἐπιπορευομένους τῇ ὄψει καὶ λόγοι προσπίπτοντες τῇ ἀκοῇ διαλανθάνουσιν ἡμᾶς καὶ διαφεύγουσι πρὸς ἑτέροις τὸν νοῦν ἔχοντας, εἶτ' αὖθις ἐπανῆλθε καὶ μεταθεῖ καὶ [μετα]διώκει τῶν προϊεμένων ἕκαστον ἐκλεγόμενος. [The rest is most probably not taken from Strato.] ᾗ καὶ λέλεκται· νοῦς ὁρῇ &c. (*v.* ZELL. *Ph. d. Gr.* i. 462, 5), ὡς τοῦ περὶ τὰ ὄμματα καὶ ὦτα πάθους, ἂν μὴ παρῇ τὸ φρονοῦν, αἴσθησιν οὐ ποιοῦντος.

[3] PLUT. *Utr. An. an Corp. sit Libido* (Fragm. i. 4, 2, p. 697): οἱ μὲν γὰρ ἅπαντα συλλήβδην ταῦτα [sc. τὰ πάθη] τῇ ψυχῇ φέροντες ἀνέθεσαν, ὥσπερ Στράτων ὁ φυσικός, οὐ μόνον τὰς ἐπιθυμίας, ἀλλὰ καὶ τὰς λύπας, οὐδὲ τοὺς φόβους καὶ

ingly combated the distinction which Aristotle drew between the rational and the sensitive part of the soul. The soul, according to his view, is a single force; reason (which, with the Stoics—preceded, however, by Aristotle[1]—he seems to have called *τὸ ἡγεμονικὸν*[2]) is the totality of the soul, and the different senses are only particular expressions of this central force.[3] The seat of the soul

*τοὺς φθόνους καὶ τὰς ἐπιχαιρεκακίας, ἀλλὰ καὶ πόνους καὶ ἡδονὰς καὶ ἀλγηδόνας καὶ ὅλως πᾶσαν αἴσθησιν ἐν τῇ ψυχῇ συνίστασθαι φάμενος καὶ τῆς ψυχῆς τὰ τοιαῦτα πάντα εἶναι· μὴ τὸν πόδα πονούντων ἡμῶν ὅταν προσκρούσωμεν, μηδὲ τὴν κεφαλὴν ὅταν κατάξωμεν, μὴ τὸν δάκτυλον ὅταν ἐκτέμωμεν· ἀναίσθητα γὰρ τὰ λοιπὰ πλὴν τοῦ ἡγεμονικοῦ, πρὸς ὃ τῆς πληγῆς ὀξέως ἀναφερομένης τὴν αἴσθησιν ἀλγηδόνα καλοῦμεν· ὡς δὲ τὴν φωνὴν τοῖς ὠσὶν αὐτοῖς ἐνηχοῦσαν ἔξω δοκοῦμεν εἶναι τὸ ἀπὸ τῆς ἀρχῆς ἐπὶ τὸ ἡγεμονικὸν διάστημα τῇ αἰσθήσει προσλογιζόμενοι, παραπλησίως τὸν ἐκ τοῦ τραύματος πόνον οὐχ ὅπου τὴν αἴσθησιν εἴληφεν, ἀλλ' ὅθεν ἔσχε τὴν ἀρχὴν εἶναι δοκοῦμεν, ἑλκομένης ἐπ' ἐκεῖνο τῆς ψυχῆς ἀφ' οὗ πέπονθε. διὸ καὶ προσκόψαντες αὐτίκα τὰς ὀφρῦς* [here must be the seat of the soul, *v. infra*] *συνήγαγον ἐν τῷ πληγέντι μορίῳ τοῦ ἡγεμονικοῦ τὴν αἴσθησιν ὀξέως ἀποδιδόντος. καὶ παρεγκόπτομεν ἔσθ' ὅτε τὸ πνεῦμα κἂν τὰ μέρη δεσμοῖς διαλαμβάνηται χερσὶ σφόδρα πιέζομεν* [WYTTENB. conjectures *ἂν τ. μ. δ. διαλ. καὶ ταῖς χερσὶ* &c.; but it would, perhaps, be better to read *ἂν τὰ μέρη δεσμ. διαλαμβάνηται ἢ ταῖς χερσὶ σφόδρα πιέζωμεν*] *ἱστάμενοι πρὸς τὴν διάδοσιν τοῦ πάθους καὶ τὴν πληγὴν ἐν τοῖς ἀναισθήτοις πλήττοντες* [WYTT. conj. *φυλάττοντες*] *ἵνα μὴ συνάψαι* [*-ασα* WYTT.] *πρὸς τὸ φρονοῦν ἀλγηδὼν γένηται. ταῦτα μὲν οὖν ὁ Στράτων ἐπὶ πολλοῖς ὡς εἰκὸς τοιούτοις.* *Plac.* iv. 23, 3: *Στράτων καὶ τὰ πάθη τῆς ψυχῆς καὶ τὰς αἰσθήσεις ἐν τῷ ἡγεμονικῷ, οὐκ ἐν τοῖς πεπονθόσι τόποις συνίστασθαι. ἐν γὰρ ταύτῃ* [*τούτῳ?*] *κεῖσθαι τὴν ὑπομονήν, ὥσπερ ἐπὶ τῶν δεινῶν καὶ ἀλγεινῶν καὶ ὥσπερ ἐπὶ ἀνδρείων καὶ δειλῶν.*

[1] *V. supra*, vol. ii. p. 127, n. 3.

[2] See preceding and following notes.

[3] See p. 468, n. 3, *supra*; SEXT. *Math.* vii. 350: *οἱ μὲν διαφέρειν αὐτὴν* [*τὴν ψυχὴν*] *τῶν αἰσθήσεων, ὡς οἱ πλείους· οἱ δὲ αὐτὴν εἶναι τὰς αἰσθήσεις καθάπερ διά τινων ὀπῶν τῶν αἰσθητηρίων προκύπτουσαν, ἧς στάσεως ἦρξε Στράτων τε ὁ φυσικὸς καὶ Αἰνησίδημος.* TERTULL. *De An.* 14: 'non longe hoc exemplum est a Stratone et Ænesidemo et Heraclito; nam et ipsi unitatem animæ tuentur, quæ in totum corpus diffusa et ubique ipsa, velut flatus in calamo per cavernas, ita per sensualia variis modis emicet, non tam concisa quam dispensata.' Since Strato did not, at the same time, like Dicæarchus, regard the soul as a separate substance, but only as a force which is inseparable from the body through having therein

Strato placed in the region between the eyebrows[1] and in the part of the brain which is there situated. Thence he held that it permeates the whole body, and especially the organs of sense,[2] connecting it probably with the *anima vitæ*.[3] Sleep is the retreat of this spirit,[4] but in

its appointed place, and in which the unity of the life of the soul is to be distinguished from its individual manifestations (see following note), TERT. *De An.* 15, is able to cite Strato, along with Plato, Aristotle, and others, in opposition to those who, like Dicæarchus, 'abstulerunt principale, dum in animo ipso volunt esse sensus, quorum vindicatur principale.' On the other hand, Sextus can also say that according to Strato the soul is identical with the *αἰσθήσεις*, inasmuch as Strato, like Aristotle, did not allocate different parts of the soul to feeling and thought.

[1] PLUT. *Plac.* iv. 5, 2 (GALEN, *H. Phil.* c. 28, p. 315; THEODORET, *Cur. Gr. Aff.* v. 23, p. 73): Στράτων [τὸ τῆς ψυχῆς ἡγεμονικὸν εἶναι λέγει] ἐν μεσοφρύῳ. POLLUX, *Onomast.* ii. 226: καὶ ὁ μὲν νοῦς καὶ λογισμὸς καὶ ἡγεμονικὸν . . . εἴτε κατὰ τὸ μεσόφρυον, ὡς ἔλεγε Στράτων. TERTULL. *De An.* 15: 'nec in superciliorum meditullio [principale cubare putes], ut Strato physicus.' Cf. *supra*, vol. ii. p. 468, n. 2.

[2] Such is the result when we combine the passages quoted *supra*, vol. ii. p. 468, n. 2 and n. 3, with the statement as to the seat of the soul. The expressions employed *supra*, p. 468, n. 2 — namely προκύπτειν, *emicare*, which imply, on the one hand, that outer impressions reach the ἡγεμονικὸν, and, on the other hand, that the soul is affected by the part in connection therewith—prove that the soul is not always spread all over the body, but has its seat in the head, whence after receipt of the impressions it streams to the organs of sense, &c. How Strato believed this was brought about, we do not learn. We can only suppose that he had in his mind either the nerves, which had at that time been discovered by Herophilus and Erasistratus, and which (or at any rate the ophthalmic nerves) were, as appears from SPRENGEL, *Gesch. d. Arzneik.* 4th ed. i. pp. 511–2, 524 held by them to be conducting tubes—or, more probably, that he was thinking of the arteries, which, according to Erasistratus, carried, not the blood, but the πνεῦμα ζωτικὸν through the body (*ibid.* p. 525 sq.).

[3] This view is referred to in the following note. It also accords with what is said *supra*, vol. ii. p. 468, n. 2, about the interruption of the πνεῦμα flowing to the ἡγεμονικὸν, and on p. 458, n. 1 about the δύναμις πνευματικὴ of the seed.

[4] TERTULL. *De An.* 43: 'Strato [here the natural philosopher and not the physician is meant] 'segregationem consati spiritus [somnum affirmat].'

what way dreams were brought into connection with this view it is impossible to say.[1]

As on this theory reason no longer constitutes the distinctive mark of the human soul, as a peculiar higher element in it, so Strato was free, on the one hand, to assert that all living creatures participate in reason, which for him coincided with consciousness, and without which he found sense-perception inconceivable;[2] while, on the other hand, he was forced to extend to the whole of the soul what Aristotle had taught as to the finitude of its lower elements. We find him accordingly not only combating the Platonic doctrine of reminiscence,[3] but criticising in a hostile spirit the proofs of the immortality of the soul advanced in the *Phædo*,[4] in a way which leads us to sup-

[1] PLUT. *Plac.* v. 2, 2 (GALEN, *Hist. Ph.* 30, p. 320) says: Στράτων [τοὺς ὀνείρους γίνεσθαι] ἀλόγῳ [τινὶ add. GAL.] φύσει τῆς διανοίας ἐν τοῖς ὕπνοις αἰσθητικωτέρας μέν πως (τῆς ψυχῆς add. GAL.) γιγνομένης, παρ' αὐτὸ δὲ τοῦτο τῷ γνωστικῷ κινομένης [GAL. gives incorrectly γνωστικῆς γινομένης]. The meaning appears to be that, during sleep the irrational nature of the mind is stronger, and the action of thought being interrupted, the mind receives and takes in many images or impressions, all more or less confused, which if awake it would allow to pass unnoticed (cf. *supra*, vol. ii. p. 75 sq. and p. 439, n. 3).

[2] EPIPHAN. *Exp. Fid.* 1090, A: πᾶν ζῷον ἔλεγεν οὐ [l. ἔλεγε νοῦ] δεκτικὸν εἶναι.

[3] See the extracts, probably from the work π. φύσεως ἀνθρωπίνης, in OLYMPIODOR. *Schol. in Phæd.* ed. Finckh. p. 127 (also PLUT. *Fr.* vii. 19) p. 177 (following Alexander of Aphrodisias, as this commentary so often does, as may be seen by the context), p. 188, α′, β′.

[4] The arguments against the proofs brought forward in the *Phædo*, 102, A sqq. which are given by OLYMPIODOR. *in Phæd.* p. 150–1, p. 191, are as follows: If the soul is immortal because as essentially life it cannot die, the same can be applied to all living bodies, of animals and of plants, for they also cannot, so long as they live, be dead; to every natural being, for the natural state of such excludes anything unnatural; to all things composed and created, for composition is incompatible with dissolution and existence with destruction. But death is not something which approaches life while it lasts, but it is a loss of

pose that along with these proofs he had abandoned the belief in immortality itself.

From the *Ethics* of Strato only a definition of the Good, which in substance agrees with that of Aristotle, has been preserved to us.[1]

life. It has not been proved that life is a quality inseparable from the concept of the soul, a quality inherent (ἐπιφέρουσα); and not imparted (ἐπιφερομένη), and even if this be the case, it can only impart life as long as it exists and as long as it is without death. Admitting all this, there always remains the consideration that, as a finite thing, it can only possess a finite and limited power, and consequently must in the end become weaker and die.—Strato also brought arguments against the assertion in the *Phæd.* 70 C sqq., that as the dead proceed from the living, so must the living proceed from the dead. This statement he proves (*ibid.* 186) to be incorrect, for existing matter does not originate from destroyed matter. Further, if a part—for example, an amputated limb—does not again live, this is not the case with the whole. Also that which is derived from another resembles it only in species and not in quantity. And, again, we do not always find any such law of reciprocity, for food becomes flesh, metal turns into rust, wood into coal, and the young man becomes an old one, but the reverse changes never happen. Thus nothing can come of the contrary, unless the substratum is retained and not destroyed. That without such a reciprocity further origin of individuals must cease is not correct: it is only requisite that similar beings, and not the same individuals should be produced.

[1] STOB. *Ecl.* ii. 80: Στράτων [ἀγαθὸν φησὶ] τὸ τελειοῦν τὴν δύναμιν δι' ἣν τῆς ἐνεργείας τυγχάνομεν. Cf. herewith, *supra*, vol. ii. p. 141 sq.

## CHAPTER XXI

### THE PERIPATETIC SCHOOL AFTER STRATO TILL TOWARDS THE END OF THE SECOND CENTURY

EVEN after Strato there were not wanting men of the Peripatetic school who won distinction by their extensive knowledge and their powers of teaching and exposition; but there is no evidence that it henceforth produced any philosopher who merited the name of an independent thinker. It continued to be one of the chief centres of the learning of the time; and of the contemporary schools none but the Stoic, which had risen to eminence under Chrysippus, could rival it in this respect. It cultivated especially the historical, literary and grammatical studies which marked the Alexandrian age above all others, and in connection with these it jealously devoted itself to rhetoric and ethics, but even in these fields contributed little that was original. Its efforts in science and metaphysics, if they did not remain altogether barren, seem to have been wholly confined to the propagation of older doctrines. Nor can we make the scantiness of our information responsible for this seeming poverty; for not only have we express complaints of the unfruitfulness of the Peripatetic school in the period referred to,[1] but we are

[1] STRABO, xiii. 1, 54, p. 609, says that after Theophrastus the Peripatetics being under the disability that they possessed of

forced to suppose that if there had been anything important to relate of Strato's successors there would have been a richer stream of historical allusion to them, and especially that the learned commentators upon Aristotle, who preserve so deep and significant a silence as to the Peripatetics between Strato and Andronicus,[1] would have found more frequent occasion to mention them.

Strato's successor, Lyco of Troas, who was president of the Peripatetic school for nearly half a century,[2] and

Aristotle only a limited number of treatises, and these mostly 'exoterical,' μηδὲν ἔχειν φιλοσοφεῖν πραγματικῶς [in the way of real scientific advance], ἀλλὰ θέσεις [commonplaces] ληκυθίζειν [to embellish]. PLUT. *Sulla*, 26: οἱ δὲ πρεσβύτεροι Περιπατητικοὶ [before Andronicus] φαίνονται μὲν καθ' ἑαυτοὺς γενόμενοι χαρίεντες καὶ φιλολόγοι, but 'it is plain that they did not possess the texts of Aristotle and Theophrastus.' The last suggestion is, of course, incorrect; as is also the idea that the philosophic barrenness of the school began only after Theophrastus (*v. supra*, i. pp. 138–9 sqq.). 'Ignoratio dialecticæ' is also charged against the Peripatetics by CIC. *Fin.* iii. 12, 41.

[1] Zeller has been unable to find, among the countless citations of ancient philosophers in the various commentaries, a single one which refers to any of these writers.

[2] Lyco of Troas (DIOG. v. 65, PLUT. *De Exil.* 14, p. 605) was a pupil both of Strato and also of the dialectician Pantoides (DIOG. 68). He was named by Strato his heir in the school (*supra*, vol. ii. p. 451, n. 1), and succeeded him in his chair as a young man, about 270–268 B.C., and after conducting the school for forty-four years, died at the age of seventy-four, about 224 B.C. (DIOG. 68 and *supra*, vol, ii. p. 451, n. 1). Lyco was a famous orator (see next note but one); busied himself greatly with public affairs and, according to DIOG. 66, did great service to Athens, where he must have become a citizen (if by συμβουλεύειν DIOG. here means that he spoke in the public assemblies). We hear that he was esteemed and rewarded by the earlier Pergamenian kings, admired by Antigonus, invited by Antiochus to his court in vain (DIOG. 65, 67: meaning, no doubt, Antiochus II., surnamed Theos), and his will (*apud* DIOG. 69 sqq.) shows that he was a wealthy man. According to HERMIPP. (*apud* DIOG. 67) he lived as one; but the account which ANTIGONUS (*apud* ATHEN. xii. 547, d) gives of his pride is, no doubt, grossly exaggerated. The

left behind him a number of works,[1] was distinguished by the grace and brilliancy of his style rather than by the originality of his contributions.[2] The little that has come down to us of his writings is confined to a definition of the Highest Good,[3] and a few remarks upon ethical subjects.[4]

Contemporary with Lyco, but diverging more widely from Aristotle, was Hieronymus of Rhodes.[5] Our

same authority (*ibid.* 548, b) and DIOG. 67 show him to have been greatly occupied with gymnastic arts. His testamentary direction as to his funeral (DIOG. 70) is that it should be seemly but *not* extravagant.

[1] To a slave, who had, no doubt, helped him in his work and to whom he gave his freedom, he bequeaths (*apud* DIOG. 73) τἀμὰ βιβλία τὰ ἀνεγνωσμένα; the unpublished writings, on the other hand, he left to his pupil Callinus, to edit for publication.

[2] CIC. *Fin.* v. 5, 13: 'Hujus [Stratonis] Lyco est oratione locuples, rebus ipsis jejunior.' Also DIOG. 65-6, praises the ἐκφραστικὸν καὶ περιγεγωνὸς ἐν τῇ ἑρμηνείᾳ, and the εὐφδία of his speech, for which he was also called Γλύκων (as in PLUT. *ibid.*), but he adds the remark: ἐν δὲ τῷ γράφειν ἀνόμοιος αὑτῷ. The examples cited by DIOG. confirm his judgment. Cf. THEMIST. *Orat.* xxi. 255 B, as to his celebrity in his own time.

[3] CLEMENS, *Strom.* i. 416 D: Λύκος [Lyco must be meant] ὁ Περιπατητικὸς τὴν ἀληθινὴν χαρὰν τῆς ψυχῆς τέλος ἔλεγεν εἶναι, ὡς Λεύκιμος [?] τὴν ἐπὶ τοῖς καλοῖς. This does not conflict with, though it certainly does not exhaust, the Aristotelian definition of happiness; but we do not know whether Lyco meant it to be an exhaustive definition or not. On the trifling worth of worldly possessions, see following note.

[4] *Apud* CIC. *Tusc.* iii. 32. 78, talking of 'ægritudo,' Lyco says, 'parvis eam rebus moveri, fortunæ et corporis incommodis, non animi malis.' *Apud* STOB. *Floril.*, *Exc. e Jo. Damasc.* ii. 13, 140 (iv. 226, ed. Mein.), Lyco says of παιδεία that it is ἱερὸν ἄσυλον. DIOG. 65-6 describes him as φραστικὸς ἀνὴρ καὶ περὶ παίδων ἀγωγὴν ἄκρως συντεταγμένος, quoting at the same time some of his sayings.

[5] CIC. *Fin.* 3, 8; ATHEN. x. 424-5; DIOG. ii. 26; STRABO, xiv. 2, 13, p. 656, and others, all speak of HIERONYMUS as a Rhodian. He was a contemporary of Lyco, Arcesilaus, and the sceptic Timon at Athens (DIOG. v. 68, iv. 41-2, ix. 112). When ATHEN. x. 424-5 calls him a disciple of Aristotle, he is merely using the phrase loosely as meaning a Peripatetic. Not to this man, but to the historian Hieronymus of Cardia, who was the

knowledge of this philosopher, who was distinguished, according to Cicero,[1] for his learning and versatility, is confined mainly to historical observations,[2] the titles of books, and unimportant isolated quotations.[3] We are told that he declared the *summum bonum* and the ultimate end of all action to consist in painlessness, which, however, he sharply distinguished from pleasure, going beyond Aristotle[4] in denying that the latter was in any

companion in arms of Eumenes and Antigonus, must we refer the statement of LUCIAN, *apud* MACROB., 22, as to a person of this name who lived to be 104 years of age, as is clearly shown at the beginning of the chapter.

[1] CIC. in the *Orator*, 57, 190 calls him 'Peripateticus inprimis nobilis,' and in *Fin.* v. 5, 14, he speaks of: 'prætereo multos, in his doctum hominem et suavem Hieronymum.' Cf. also *Fin.* ii. 6, 19. Sundry details are to be gathered also from the passages cited *infra*.

[2] For example: ATHEN. ii. 48, b, v. 217, e, xiii. 556, a, 557, e, 602, a, 604, d (chiefly from the ἱστορικὰ ὑπομνήματα, which is named at 557, e, and 604 d), xiv. 635-6 (from the fifth book π. ποιητῶν, which treated of odes for the κιθάρα), x. 424-5, xi. 499-500 (from the work π. μέθης), x. 434-5 (from the Letters); DIOG. i. 267 (from the second book of the σποράδην ὑπομνήματα, which are no doubt identical with the ἱστ. ὑπομν.), ii. 14 (the like), 26, 105 (ἐν τῷ π. ἐποχῆς), viii. 21, 57, ix. 16; PLUT. *Qu. Conv.* Proœm. 3, mentions his λόγοι παρὰ πότον γενόμενοι and also reckons him (*N. p. suav. Vivi*, 13, 6, p. 1096) amongst the writers on music. That the Hieronymus mentioned in DAMASCIUS and JOSEPHUS is not the same as this writer has been shown by ZELLER, *Ph. d. Gr.* i. 84.

[3] As in CIC. *ibid.* (from a work on Rhetoric or Metre); the citation of about thirty verses in Isocrates; a remark in PLUT. *Qu. Conv.* i. 8, 3, 1, p. 626, on the shortsightedness of the aged; a word in SENECA, *De Ira*, i. 19, 3, against anger, and in STOB. *Floril.*, *Exc. e Jo. Dam.* ii. 13. 121 (vol. iv. 209, ed. Mein.), against education by pedagogues.

[4] The chief source of information here is CICERO, who often refers to this view of Hieron. So *Acad.* ii. 42, 131: 'Vacare omni molestia Hieronymus [finem esse voluit].' And *Fin.* v. 11, 35, 25, 73, *Tusc.* v. 30, 87-8; *Fin.* ii. 3, 8: 'Tenesne igitur, inquam, Hieronymus Rhodius quod dicat esse summum bonum, quo putet omnia referri oportere? Teneo, inquit, finem illi videri, nihil dolere. Quid? idem iste de voluptate quid sentit? Negat esse eam, inquit, propter se ipsam expetendam;' 6, 19: Nec Aristippus, qui voluptatem summum bonum dicit, in voluptate ponit non dolere, neque

sense a good. To the same period belongs also Prytanis.[1]

After Lyco's death Aristo of Ceos[2] was elected by the choice of his fellow-disciples to the presidency of

Hieronymus, qui summum bonum statuit non dolere, voluptatis nomine unquam utitur pro illa indolentia; quippe qui ne in expetendis quidem rebus numeret voluptatem.' v. 5, 14: 'Hieronymum; quem jam cur Peripateticum appellem, nescio, summum enim bonum exposuit vacuitatem doloris.' Cf. CLEMENS, *Strom.* ii. 415, C: ὅ τε Ἱερώνυμος ὁ Περιπατητικὸς τέλος μὲν εἶναι τὸ ἀοχλήτως ζῆν· τελικὸν δ' ἀγαθὸν μόνον τὴν εὐδαιμονίαν. Here Clement seems to have derived his information from the same source as CICERO, *Acad.* ii. 42, 131; and there ANTIOCHUS is indicated as Cicero's authority. That Cicero was directly acquainted with an ethical as well as a rhetorical work of Hieronymus cannot really be inferred from *Fin.* ii. 6, 19. This ἀοχλησία is also referred to by JAMBL. *apud* STOB. *Ecl.* i. 920, and the ἡσυχία by PLUT, *Sto. Rep.* 2, 2, as the ideal of Hieronymus. The latter adds that, like Epicurus, he lived up to his theory.

[1] This Peripatetic was employed by Antigonus Doson (B.C. 230–221) in various State affairs, and POLYB. v. 93, 8, reckons him among the ἐπιφανεῖς ἄνδρες ἐκ τοῦ περιπάτου. He must have been at that time already considerably advanced in years, if his pupil EUPHORION was really born (as SUIDAS says) in Ol. 126, B.C. 277–273. PLUT. *Qu. Conv.* Procem. 3, names him among the distinguished philosophers who have written table talk.

[2] Aristo is called Κεῖος in Lyco's will (DIOG. v. 74) and it has since been the custom to name him thus, in order to distinguish him from the Stoic of the same name, Ἀρίστων ὁ Χῖος, who is, nevertheless, often confounded with him on account of the similarity of their surnames. Another surname, Ἰουλιήτης or Ἰλιήτης (DIOG. vii. 164) shows that his family came from Julis, the chief town in the island of Ceos, as is remarked by STRABO, x. 5, 6, p. 486, and STEPHANUS, *De Urb.* Ἰουλις, PLUT. *De Exil.* 14, p. 605 names Ἀρίστων ἐκ Κέω between Glyco and Critolaus; Lyco himself speaks of him as his pupil (see following note) and CIC. *Fin.* v. 5, 13. When we find that not he but Aristo is in SEXT. *Math.* ii. 61 called the γνώριμος of Critolaus, it is hardly possible to suppose that a younger Peripatetic of the same name is meant, but we must suppose that γνώριμος, which is ordinarily used of a pupil, has here a wider signification; QUINTILIAN, xi. 15, 19 seems to have used the same expression: 'Critolai peripatetici discipulus.' Again, we hear that he was a ζηλωτὴς of the Borysthenean Bio: see STRABO, x. 5, 6, and ZELLER, *Ph. d. Gr.* i. 294, 4. The meaning may be merely that he

the school.[1] He also is said to have been distinguished rather for the grace and finish of his style than for originality of thought.[2] Of his numerous writings only some of the titles,[3] and a few fragments, chiefly of an historical character,[4] have come down to

admired Bio's writings, or it may be that he was personally acquainted with Bio, who must have been still living during Aristo's youth (cf. ZELLER, *Ph. d. Gr.* i. 294, 4).—It is not Aristo of Ceos, but of Chios, that worked with Arcesilaus (who died 241 B.C.) according to STRABO, i. 2, 2, p. 15; SEXT. *Pyrrh.* i. 234; DIOG. iv. 33. For further information about him and his works see HUBMANN, in *Jahn's Jahrb. Supplement.* iii. 1834, p. 102 sqq.; RITSCHL, *Aristo d. Peripat. apud* CIC. *De Sen.* 3 (*Rhein. Mus. N. F.* 1842, i. 193 sqq.); KRISCHE, *Forsch.* 405–6, 408.

[1] Aristotle appears to have at least indicated Theophrastus as his successor; Theophrastus bequeathed the περίπατος to ten friends; Strato to Lyco (*v. supra*, vol. i. p. 39, n. 1, and vol. ii. p. 350, n. 5); Lyco left it in his will (*apud* DIOG. v. 70) τῶν γνωρίμων τοῖς βουλομένοις and particularly to ten friends there named (all of whom except Aristo are otherwise unknown), with the proviso: προστησάσθωσαν δ' αὐτοὶ ὃν ἂν ὑπολαμβάνωσι διαμενεῖν ἐπὶ τοῦ πράγματος καὶ συναύξειν μάλιστα δυνήσεσθαι. If, however, what THEMIST. *Or.* xxi. 255 B, relates is true, he must have allowed Aristo a precedence even before himself.

[2] CIC. *Fin.* v. 5, 13: 'Concinnus deinde et elegans hujus [Lyconis, sc. discipulus] Aristo; sed ea quæ desideratur a magno philosopho gravitas in eo non fuit. Scripta sane et multa et polita; sed nescio quo pacto auctoritatem oratio non habet. The same is meant by STRABO (*ut supra*) in the comparison with Bio.

[3] Of his works we know a 'Lyco' (mentioned by PLUT. *Aud. Po.* 1 *init.* p. 14, where no one else can be meant; cf. CIC. *Cato M.* 1, 3, and also RITSCHL, *ibid.*), which is there classed with Æsop's Fables and the *Abaris* of Heraclides, and which must, therefore, like this latter, have been a collection of fables; and also the Ἐρωτικὰ ὅμοια, cited by ATHEN. x. 419, c. xiii. 563–4, xv. 674, b. It appears, however, from DIOG. vii. 163, that all the works there said to be by the Stoic Aristo (except the Letters of PANÆTIUS and SOSICRATES) were also ascribed to our Aristo of Ceos; probably, however, only some of them were so ascribed, and it is only of some that the ascription could in any case be true.

[4] All the *Fragments* in ATHENÆUS (see Index)—except that at ii. 38, 9 (a note on beverages)—as also the notices *apud* PLUT. *Themist.* 3, *Aristid.* 2, SOTION, *De Fluv.* 25, are concerned with historical matter. No doubt DIOGENES (v. 64, *supra*, vol. i. p. 37, n. 4) took from Aristo the

us. His successor,[1] Critolaus of Phaselis in Ly-

testaments of the Peripatetic philosophers, besides other information about them; and this is probably the reason why his history of the Lyceum does not go beyond Lyco. There has also been handed down to us, in STOB. *Ecl.* i. 828 (where it is our Aristo that is meant), a division of the ἀντιληπτικὴ δύναμις τῆς ψυχῆς into the αἰσθητικὸν and the νοῦς, the first working in connection with the bodily organs, and the latter working without organs; and also in SEXT. *Math.* ii. 61, QUINTIL. ii. 15, 19 (cf. *infra*, p. 483, n. 1) a definition of Rhetoric, which allows us to suppose that he wrote some work on the subject.—The *Fragments* from Aristo in STOBÆUS, *Floril.* (see Index), belong to the Stoic of that name, as is clearly shown in various passages: for example, 4, 110; 80, 5; 82, 7, 11, 15, 16. The information about an Aristo given by SIMPL. *Categ.*, *Schol. in Ar.* 65, b, 10, 66, a, 38 evidently refers to a younger Peripatetic, one of the successors of Andronicus, and probably the same as he whom SENECA, *Ep.* 29, 6, makes fun of. It is not clear which Aristo is meant in PLUT. *Amator.* 21, 2, p. 767, *Præc. ger. Reip.* 10, 4, p. 804. In PLUT. *Demosth.* 10, 30 the printed texts, at any rate, give 'Χῖος.' As to the work π. κενοδοξίας, as the extract therefrom *apud* PHILODEM. *De Vit.* x. 10, 23, SAUPPE makes it probable (*Philocl. de Vit. Lib. Dec.* pp. 6–7, 34) that they refer to our Aristo.

[1] That Critolaus was Aristo's direct successor is not expressly said by any of our authorities; for CLEMENT, who gives a list of the Peripatetic 'Diadochoi' in *Strom.* i. 201 B (or, at least, the printed text of that passage) passes over Aristo ('after Aristotle διαδέχεται Θεόφραστος· ὃν Στράτων· ὃν Λύκων· εἶτα Κριτόλαος· εἶτα Διόδωρος'). PLUT. *De Exil.* 14, p. 605, does not give a full list, but only names those Peripatetics who came to Athens from abroad, when he says: Ἀριστοτέλης ἦν ἐκ Σταγείρων . . . Γλύκων ἐκ Τρῳάδος, Ἀρίστων ἐκ Κέω, Κριτόλαος Φασηλίτης. Neither does CIC. *Fin.* v. 5, 13–4 intend to state the order of sequence of the heads of the school, for he is only speaking of the relation of the later Peripatetics to Aristotle and Theophrastus; and so, after naming Strato, Lyco, and Aristo, he continues, 'Prætereo multos, in his . . . Hieronymum;' also after a few remarks about him, he adds, 'Critolaus imitari antiquos voluit,' &c. Thus there appears to be a possible vacancy for further names between Aristo and Critolaus, and this is made somewhat more probable when we consider the time which elapsed between Lyco's and Critolaus's death, which seems very long for only two school directors. Lyco died 226–4 B.C., but Critolaus (see foll. note) was in Rome 156–5 B.C. Supposing that he took this journey during the latter part of his life, we have a period of more than seventy years to cover his and Aristo's school-directorship, and if we add the forty-four years of Lyco's directorship it makes in all for

cia,[1] seems to have been more important. All that we

the three men nearly 120 years. ZUMPT ('Bestand d. Philos. Schulen in Athen.' *Abh. d. Berl. Akad. Hist.-phil. Kl.* 1842, p. 90 sqq.) is inclined to interpose other names between Aristo and Critolaus, and he cites the *Anonymus of Menage*, who at p. 13, 8, West., says: διάδοχοι δ' αὐτοῦ [Arist.] τῆς σχολῆς κατὰ τάξιν ἐγένοντο οἵδε· Θεόφραστος, Στράτων, Πραξιτέλης, Λύκων, Ἀρίστων, Λυκίσκος, Πραξιφάνης, Ἱερώνυμος, Πρύτανις, Φορμίων, Κριτόλαος. Unfortunately, this evidence is not satisfactory. For we cannot accept as a trustworthy list of the school-chiefs correctly set out κατὰ τάξιν, a statement which places between Strato and Lyco,—who undoubtedly followed directly one upon the other—an unknown individual, Praxiteles, not even mentioned in Strato's will (whom we cannot make a contemporary and colleague of Strato, as ZUMPT would have it, any more than his διάδοχος), and describes as the *second* in order after Aristo, Praxiphanes, who was a scholar of Theophrastus (*supra*, vol. ii. p. 449), and as the *fifth* after him at Athens Phormio, who, as we learn from CIC. *De Orat.* ii. 18, 75–6, was in 194 B.C. an old man, and in Ephesus, evidently not merely on a journey; and inserts the still earlier Prytanis (*supra*, vol. ii. p. 477, n. 1) as Aristo's *fourth* successor: and supplies us in all with as many as *seven* 'Diadochoi' between the years 226 and 156 B.C. —On the other side we must remember that CICERO's words do not necessarily imply any gap between Aristo and Critolaus, but that it rather seems most likely that he did not know of any intervening directors: Hieronymus and the 'multi' whom he passes over are those whom he could not insert in the list of διάδοχοι since they were not school-directors. Also the statement that Andronicus (or, according to some, his pupil Boëthus) was the twelfth director in succession from Aristotle, is decidedly against ZUMPT's theory. And why, after all, could not the presidencies of Aristo and Critolaus have lasted seventy or eighty years, just as well as that of Lyco lasted forty-four, and that of Theophrastus thirty-six years? The latter two, by the way, were no longer young when they were appointed. And we know from LUCIAN, *Macrob.* 20 that Critolaus (not as ZUMPT, p. 90, says, Aristo) lived in fact to over eighty-two years of age. The Stoics Chrysippus and Diogenes held the presidency for at least eighty years, and the first five Stoic Diadochoi presided in all for a period of 140 years. Similarly, from 1640 to 1740, and again from 1740 to 1840, only three princes, and from 1640 to 1786 (*i.e.* in 146 years) only four princes occupied the throne of Prussia.

[1] The native town of Critolaus is determined by PLUT. *ibid.* and other evidence. Otherwise the only certain piece of information we have relating to his life is that he took part, in conjunction with Diogenes and Critolaus, in the celebrated embassy which (according to CIC. *Acad.* ii. 45,

know of his views [1] shows him to have been in the main a true adherent of the Peripatetic teaching,[2] who, however, differed from Aristotle on several points. Thus he conceived of the soul, including the reason, as consisting of ether,[3] and in his Ethics he went beyond Aristotle in asserting that pleasure was an evil.[4] In other respects his views upon the nature of the *summum bonum* are thoroughly Aristotelian: he describes it generally as the perfection of a natural life, and further claims for it more particularly that it should embrace the three kinds of Goods,[5] among which, however, he

137, during the consulship of P. Scipio and M. Marcellus, *i.e.* 598–9 A. U. C., or 156–5 B.C.; see CLINTON, *Fasti Hellen.*) was sent to Rome by the Athenians to deprecate the fine of 500 talents which had been imposed on the Athenians for the sack of Oropus. For further information on this subject see PAUSAN. vii. 11; CIC. *ibid.*, *De Orat.* ii. 37, 155, *Tusc.* iv. 3, 5, *Ad Att.* xii. 23; GELL. *N. A.* vi. 14, 8, xvii. 21, 48; PLIN. *H. N.* vii. 30, 112; PLUT. *Cato Maj.* 22; ÆL. *V. H.* iii. 17 (see also *infra* as to the historical bearings of the story). That Critolaus, as well as the others, lectured in Rome is expressly stated (see following note). It is also apparent from what has been stated in the foregoing note, and from what we know of the age of his successors, that Critolaus made this journey late in life. Except by the fact that he lived to be over eighty-two years of age (*v. ibid.*), it is not possible to indicate the date of his death.

[1] Cf. also CIC. *Fin.* v. 5, 14: 'Critolaus imitari antiquos voluit, et quidem est gravitate proximus, et redundat oratio, attamen is quidem in patriis institutis manet.' In reference to his lectures in Rome, GELL. vi. 14, 10 (following Rutilius and Polybius) says: 'Violenta et rapida Carneades dicebat, scita et teretia Critolaus, modesta Diogenes et sobria.'

[2] As CICERO indicates; see preceding note.

[3] STOB. *Ecl.* i. 58: Κριτόλαος καὶ Διόδωρος ὁ Τύριος νοῦν ἀπ' αἰθέρος ἀπαθοῦς. TERTULL. *De An.* 5: 'Nec illos dico solos, qui eam [animam] de manifest is corporalibus effingunt . . . ut Critolaus et Peripatetici ejus ex quinta nescio qua substantia [the πέμπτη οὐσία, the ether].'

[4] GELL. *N. A.* ix. 5, 6; 'Critolaus Peripateticus et malum esse voluptatem ait et multa alia mala parere ex sese, injurias, desidias, obliviones, ignavias.'

[5] CLEMENS, *Strom.* ii. 316, D: Κριτόλαος δὲ, ὁ καὶ αὐτὸς Περιπατητικὸς, τελειότητα ἔλεγεν [sc. τὸ

gave so unconditioned a preference to those of the soul that the others shrink into complete insignificance beside them.[1] Similarly in Physics he came forward as the defender of an important Aristotelian doctrine in maintaining the eternity of the world and of the human race against the Stoics.[2] He rests his arguments chiefly upon the immutability of the order of nature, which excludes the supposition that man has ever come into existence in any other way than as he now does; he adduces as indirect proof of the same the multiform incongruities involved in the idea that primeval man sprang from the earth; and concludes that man, and therefore also the world, must be eternal, nature having, as Plato and Aristotle had already declared,[3] conferred upon the whole race by means of propagation the immortality which she was unable to bestow upon individuals. He further remarks that a self-caused existence like the world must be eternal; if the world had a beginning, it would exhibit growth and evolution, not only in respect of its material frame, but also of the indwelling reason that governs it; this, however, is impossible in a being, like it, already perfect. While sickness, age, or want destroys living creatures, they

*τέλος*] *κατὰ φύσιν εὐροοῦντος βίου. τὴν ἐκ τῶν τριῶν γενῶν* [the three kinds of Goods] *συμπληρουμένην προγονικὴν* [? *ἀνθρωπικὴν*] *τελειότητα μηνύων.* STOB. *Ecl.* ii. 58: *ὑπὸ δὲ τῶν νεωτέρων Περιπατητικῶν, τῶν ἀπὸ Κριτολάου,* [sc. *τέλος λέγεται*] *τὸ ἐκ πάντων τῶν ἀγαθῶν συμπεπληρωμένον. τοῦτο δὲ ἦν τὸ ἐκ τῶν τριῶν γενῶν.*

[1] CIC. *Tusc.* v. 17, 51: 'Quo loco quæro, quam vim habeat libra illa Critolai: qui cum in alteram lancem animi bona imponat, in alteram corporis et externa, tantum propendere illam bonorum animi lancem putet, ut terram et maria deprimat.'

[2] PHILO, *Ætern. Mundi*, p. 943 B—947 B, Hösch., c. 11–15, Bern.

[3] *Supra*, vol ii. p. 35, n. 2 cf. ZELL. *Ph. d. Gr.* i. 512, 3.

cannot affect the world as a whole; if the order or destiny of the world is acknowledged to be eternal, this must also be true of the world itself, which indeed is nothing else than the manifestation of this order. While the leading thoughts of this argument are not new, yet we must recognise in them an able defence of the Peripatetic doctrine. What we are further told of Critolaus[1] is of little importance.

Contemporaneous with Aristo and Critolaus was Phormio, the Peripatetic, whom Hannibal met at Ephesus (*circ.* 195 B.C.),[2] but of whom beyond the unseasonable lecture which he delivered to the Carthaginian hero upon generalship, nothing further is known.[3] To the same period belong apparently Sotion's[4] much-read work on the schools of philosophy[5] and the

[1] According to STOB. *Ecl.* i. 252, Critolaus held time to be a νόημα ἢ μέτρον, and not a ὑπόστασις. See also SEXT. *Math.* ii. 12, 20. According to QUINTIL. ii. 17, 15, he made sharp attacks on Rhetoric (of which Sext. tells us something), defining it, according to QUINT. ii. 15, 23, as *usus dicendi* (and QUINT. adds, *nam hoc* τριβὴ *significat*), which means (as PLATO had said in the *Gorg.* 463 B) that it was not an art but a mere readiness of speech acquired by practice. Further information as to what he said in connection with this criticism of oratory may be found in GELL. xi. 9.

[2] We have this incident from CIC. *De Orat.* ii. 18. As Hannibal was then with Antiochus in Ephesus, it must have been about the time stated in the text; and as he called the philosopher a *delirus senex*, Phormio must have then been advanced in years.

[3] For, as already remarked, we can make nothing of the statement of the ANON. MEN. cited at p. 480, n. *supra*.

[4] That Sotion was a Peripatetic is not expressly stated, but is evident from the whole character of his writings. Cf. SOTION, *De Fluv.* 44 (WESTERMANN, Παραδοξόγραφοι, p. 191).

[5] Cf. WESTERMANN, Παραδοξόγραφοι, p. xlix; and see particularly PANZERBIETER, 'Sotion,' in *Jahn's Jahrbb. Supplement*, v. (1837) p. 211 sqq. where it is shown from the data given by DIOGENES that the Διαδοχὴ τῶν φιλοσόφων must have been written between 200 and 150 B.C.—probably between 200 and 170 B.C.: inasmuch as, on the one hand, Chrysippus, who

histories[1] of Hermippus and Satyrus. Heraclides

died about 206, was mentioned in the book (DIOG. vii. 183), and, on the other hand, Heraclides Lembus (*de quo infra*) made an extract from it. PANZERBIETER also makes it probable that the Διαδοχὴ consisted of 13 books, whose contents he endeavours to indicate. To this work belong also the references in ATHEN. iv. 62, e, viii. 343, c, xi. 505, c; SEXT. *Math.* vii. 15.—ATHEN. viii. 336, d, tells us of another work of Sotion's, περὶ τῶν Τίμωνος σίλλων. It is very questionable whether it is chronologically possible that he could have written the 12 books Διοκλείων ἐλέγχων directed against Diocles of Magnesia (*v.* DION. x. 4). At any rate the Κέρας Ἀμαλθείας, (GELL. *N. A.* i. 8, 1, cf. with PLIN. *H. N.* præf. 24), the fragment on rivers and springs (in WESTERMANN'S Παραδοξόγραφοι, p. 183 sqq., cf. with PHOT. *Bibl. Cod.* 189), which was probably part of the last-named work, the writing π. ὀργῆς (STOB. *Floril.* 14, 10, 20, 53, 108, 59, 113, 15) and those from which are derived the Fragments *apud* STOB. *Floril.* 84, 6–8, 17, 18, belong to one or perhaps to two younger men of the same name. We should say to one, if the Peripatetic Sotion mentioned by GELL. as author of the Κέρας Ἀμ. is identical with the Sotion who was Seneca's (*Epist.* 49, 2, 108, 17–20) teacher in the school of Sextus (ZELL. *Ph. d. Gr.* iii. a, 600, 3, 605, 3); MÜLLER, *Fragm. Hist. Gr.* iii. 168 takes it for granted that this is the case, but there seems to be some probability that they were different persons. In this case we must also attribute to that Peripatetic (ZELL., *ibid.* iii. a, 694, 2nd ed.) the citations in ALEX. APHR. *Top.* 123 (which appear to be from a commentary on Aristotle), and in CRAMER'S *Anecd. Paris.* i. 391, 3; and the same man is perhaps meant in PLUT. *Frat. Am.* c. 16, p. 487, and *Alex.* c. 61. On the other hand, the moral maxims cited by STOBÆUS belong to Seneca's teacher. It is impossible to say who was the Sotion frequently cited in the *Geoponica*, but he was in any case not the author of the Διαδοχή. M. HERTZ 'Ramenta Gelliana' (*Bresl. Universitatschrift*, 1868) p. 15–6 attributes the Κέρας Ἀμαλθ. to the elder Sotion, but this does not follow from what is said by GELL. i. 8, 1; cf. ATHEN. xiii. 588 C; DIOG. ii. 74.

[1] See LOZYNSKI, *Hermippi Fragm.* Bonn, 1832; PRELLER, in *Jahn's Jahrb.* 1836, xvii. 159 sqq.; MÜLLER, *Fragm. Hist. Gr.* iii. 35 sqq.; NIETZSCHE, *Rhein. Mus.* xxiv. 188–9, Z. HERMIPPUS is described by HIERON. *De Script. Eccl.* c. 1 (whose authority is not of much value) as a Peripatetic, and by ATHEN. ii. 58–9, v. 213–4, xv. 696–7 as ὁ Καλλιμάχειος, *i.e.* 'the pupil of Callimachus'; he is, therefore, probably the same Hermippus as is said to be a native of Smyrna in ATHEN. vii. 327 C. As we hear that in his chief work he mentioned the death of Chrysippus (DIOG. vii. 184) whereas he is not referred to as an authority for later events, we may infer that he must have written

Lembus,[1] Agatharchides and Antisthenes of Rhodes

about 200 B.C. or soon after. The citation in the *Etymol. M.* 118, 11 would carry the date a little further—to about 203 B.C.—if the work there referred to was by him; see MÜLLER's note to *Fr.* 72.—Of his books, we hear of a great work of biography, the Βιοί, different parts of which seem to have been known by various separate names.—A second work π. τῶν ἐν παιδείᾳ διαλαμψάντων (*Etym. M.* ibid.), of which the π. τῶν διαπρεψάντων ἐν παιδείᾳ δούλων cited by SUIDAS *s. v.* Ἴστρος was no doubt a part, is with a great balance of probability ascribed by PRELLER, MÜLLER and others to the later Hermippus of Berytus. As to other writings *not* belonging to our Hermippus, see PRELLER, p. 174 sqq. For the list of the works of Aristotle and Theophrastus probably given in the Βίοι, see vol. i. p. 51.—In like manner, SATYRUS is described as a Peripatetic in ATHEN. vi. 248, d. xii. 534, b, 541, c. xiii. 556, a. His chief work was a collection of biographies, cited as the Βίοι (cf. ATHEN. vi. 248, d, f, 250 f, xii. 541, c, xiii. 557, c, 584, a; DIOG. ii. 12, viii. 40, 53; HIERON. *Adv. Jovin.* ii. 14, *De Script. Eccl.* c. 1), and called more fully (as is inferred by BERNAYS, *Theophr. üb. Frömm.* 161 from HIER. *Adv. Jov.*) Βίοι ἐνδόξων ἀνδρῶν. Further ATHEN. iv. 168 E, cites from a writer who is evidently our Satyrus, a fragment from a work π. χαρακτήρων. Another book in which a list of the Demes of Alexandria was given (THEOPHIL. *Ad Autol.* ii. p. 94), and a collection of proverbs (DIONYS. HAL. *Antiquitt.* i. 68) are probably, but not certainly, the work of a later scholar of whom (if he existed) we do not know whether he was or was not a Peripatetic (for in ATHEN. xiii. 556, a, only *our* Satyrus can be meant, and he is in fact always designated in the same manner). We can say with more certainty that the poem on precious stones, which PLIN. *H. N.* xxxvii. 2, 31, 6, 91, 7, 94, cites as by a Satyrus, was not the work of our Peripatetic. Cf. MÜLLER, *ibid.* 159, and the Fragments there, which in so far as they are genuine, contain only historical matter, excepting those from the 'Characters.'

[1] See MÜLLER, *Hist. Gr.* iii. 167 sqq. HERACLIDES, surnamed Lembus (cf. MÜLLER, *ibid.*), came, according to DIOG. v. 94, from Calatis in Pontus or from Alexandria; according to SUIDAS, *s.v.* Ἡρακλ. from Oxyrynchus in Egypt. According to SUID. he lived under Ptolemy Philometor (181–147 B.C.) in a distinguished position. SUID. calls him φιλόσοφος, and adds that he was the author of philosophical and other works. As his helper Agatharchides (see following note) is counted among the Peripatetics, and his own literary activity lay in this direction, we may include him also as one of the school. The Λεμβευτικὸς λόγος, which is said to have been the origin of his surname (DIOG. *ibid.*), was probably a philosophical work; but the most important of his works were, in any way, those which were historical. We know of an historical work in at least

are rather later.[1] No single utterance on philosophy, however, has been preserved to us from any of these.

More important for us is Diodorus of Tyre,[2] the successor of Critolaus. In his view of the soul he agreed with his master,[3] but differed from him and from

thirty-seven books, an extract from the biography of Satyrus (DIOG. viii. 40, 44, 53, 58), and a Διαδοχὴ in six books, which was an epitome of Sotion's work (DIOG. v. 94, 79, viii. 7, x. 1). See the Fragm. of these, *apud* MÜLLER, *ibid.*

[1] AGATHARCHIDES of Cnidos, ὁ ἐκ τῶν περιπάτων (STRABO, xiv. 2, 15, p. 656), was secretary to the above-named Heraclides Lembus (PHOT. *Cod.* 213 *init.*), and was afterwards (as we learn from his own words *apud* PHOT. *Cod.* 250, p. 445, a, 33, 460, b, 6) the tutor of a prince (MÜLLER, *ibid.* 191 supposes, with WESSELING, that it was Ptolemy Physcon II., who reigned from 117–107 B.C.). Agatharchides wrote several historical and ethnographical works, of which one on the Red Sea has been preserved in great part by PHOT. *Cod.* 250, pp. 441–460; as to the rest see MÜLLER, p. 190 sqq.—So ANTISTHENES is spoken of by PHLEGON, *Mirab.* 3, as a Peripatetic and a distinguished author, of whom he tells us a wonderful story about an alleged occurrence of the year 191 B.C. He is probably the same as the Peripatetic whose Διαδοχαὶ Diogenes often cites, and is, perhaps, also to be identified with the historian from Rhodes, who, according to POLYBIUS, xvi. 14, was still alive during the first thirty years or so of the second century (MÜLLER, *Hist. Gr.* iii. 182, believes the two to be different persons). The citations in Diogenes do not carry us beyond the death of Cleanthes (MÜLLER, *ibid.*). That the pseudo-Aristotelian Μαγικὸς probably belonged to this Antisthenes of Rhodes has been already remarked, *supra*, vol. i. p. 81, n. 1.

[2] STOB. *Ecl.* i. 58, calls this Diodorus a Tyrian, and in CIC. *De Orat.* i. 11, 45, *Fin.* v. 5, 14, and CLEM. *Strom.* 1, 301 B, he is described as the disciple and successor of Critolaus. Otherwise nothing is known about him, and it is impossible to define the date of his death or of his accession to the headship of the school; if, however, we can trust what CIC. says in the *De Orat.* ibid., he must have been still alive in 110 B.C. (see ZUMPT, 'Ueber d. Bestand d. philos. Schulen in Athen.,' *Abh. d. Berl. Akad. Hist.-phil. Kl.* 1842, p. 93); but this, in view of the facts set out in n. 3 on p. 487 *infra*, is questionable.

[3] So STOB. *ibid.*; see *supra*, vol. ii. p. 481, n. 3. Still, he did not propose to overlook the difference between the rational and the irrational in the soul; for, according to PLUT. Fragm. 1, *Utr. An. an Corp.* c. 6, 2 (if here Διόδωρος may be read for Διόδοντος, or if we may take the 'Διόδοτος' adopted by Dübner as being another form of the same

Aristotle in his ethics, uniting with their views upon the *summum bonum* those of Hieronymus, and to a certain extent combining the Stoic and Epicurean ethical principles with one another by maintaining that happiness consists in a virtuous and painless life;[1] as, however, virtue was declared by him to be the most essential and indispensable element in it, this deviation is in reality less important than at first appears.[2] Erymneus,[3] the successor of Diodorus, we know only

name), he allowed that the λογικὸν of the ψυχὴ had its special πάθη, and that the συμφυὲς [sc. τῷ σώματι] and ἄλογον had special πάθη also; which can be reconciled with the 'ἀπαθὲς' of Stob. by supposing that he held that the modifications of the rational portion of the soul, including the activities of thought, were improperly described 'πάθος.'

[1] CIC. *Fin.* v. 5, 14: 'Diodorus, ejus [Critol.] auditor, adjungit ad honestatem vacuitatem doloris. Hic quoque suus est; de summoque bono dissentiens dici vere Peripateticus non potest.' So also 25, 73, ii. 6, 19, and *Acad.* ii. 42, 131; cf. *Fin.* ii. 11, 34: 'Callipho ad virtutem nihil adjunxit, nisi voluptatem: Diodorus, nisi vacuitatem doloris.' *Tusc.* v. 30, 85: 'Indolentiam autem honestati Peripateticus Diodorus adjunxit.' *Ibid.* 87: 'Eadem [like the Stoics] Calliphontis erit Diodorique sententia; quorum uterque honestatem sic complectitur, ut omnia, quæ sine ea sint, longe et retro ponenda censeat.' CLEMENS, *Strom.* ii. 415 C: καὶ Διόδωρος ὁμοίως, ἀπὸ τῆς αὐτῆς αἱρέσεως γενόμενος [as Hieronymus], τέλος ἀποφαίνεται τὸ ἀοχλήτως καὶ καλῶς ζῆν.

[2] We find also a definition of Rhetoric ascribed to a Diodorus (NIKOL. *Progymn. Rhet. Gr. apud* SPENGEL, iii. 451, 7), which implies that he wrote about Rhetoric. There is the less reason to doubt that this Diodorus is the Peripatetic, since we have seen that the same question arose in the cases of Aristo and Critolaus; *supra*, vol. ii. p. 483, n. 1.

[3] The long and detailed fragment of POSIDONIUS, preserved by ATHEN. v. 211, d sqq., gives the history of one Athenion, described as a Peripatetic, who had studied first in Messene and in Larissa (the addition that he became head of the school in Athens is plainly a blunder of Athenæus, which is refuted by his own quotation from Posidonius), and had then contrived by flattery to ingratiate himself with Mithridates, and so to make himself for a time the master of Athens (meaning evidently the same man who is called 'Aristion' by PLUT. *Sulla*, 12, 13, 23, and elsewhere, and who is described by APPIAN, *Mithr.* 28, as an Epi-

by name. With regard to Callipho and Dinomachus, two philosophers who in ethics occupy an intermediate position between the Epicureans and the Peripatetics, we are wholly ignorant to which school they belonged.[1]

Among our sources of information with regard to the state of the Peripatetic philosophy during the third and second century B.C. are probably to be reckoned most of the writings which our previous investigation excluded as spurious from the collected works of Aristotle. While the contribution they supply is an insignificant one, yet it is not so wholly worthless but that it will repay us to examine its contents. To this class belongs, in the field of logic, the second part of the *Categories*, which has probably come down to us in its present form from that period.[2] Important as these so-called 'Postprædicamenta' of the later logic may have been, yet the treatment which a few of the principles of Aristotelian logic here receive cannot but appear

curean); and Posidonius says explicitly that this man was a natural son of Athenion, a pupil of Erymneus. As Athens revolted from the rule of the Romans in 88 B.C., it follows from the account given in this Fragment that Erymneus cannot have begun his headship of the school later than 120–110 B.C.

[1] What is known of these two philosophers through CIC. *Fin.* ii. 6, 19, 11, 34 (*supra*, vol. ii. p. 487, n. 1), v. 8, 21, 25, 73, *Acad.* ii. 42, 131, *Tusc.* v. 30, 85, 87, *Offic.* iii. 34, 119, and CLEM. *Strom.* ii. 415 C, limits itself to this: that they thought to find the highest happiness in the union of pleasure and virtue, or, as CLEMENT says, they sought it in pleasure, but they further explained that virtue was equally valuable; or rather, according to *Tusc.* v. 30, 87 indispensable. According to CIC. *Fin.* v. 25, 73, Callipho was older than Diodorus, and according to *Acad.* ii. 45, 139, older, or at any rate not younger, than Carneades. It is not stated to what school he and Dinomachus belonged; but HARLESS (*Fabric. Biblioth.* iii. 491) makes a gross mistake when he suggests that this Dinomachus is the Stoic mentioned by LUCIAN, *Philopseud.* 6 sqq. for the latter was evidently a contemporary of Lucian.

[2] *Supra*, vol. i. p. 64, n. 1.

insignificant to us, and a like judgment must be passed upon the last chapter of the work περὶ Ἑρμηνείας.[1] The spurious treatise on the Elements of Metaphysics [2] contains, with the exception of a passage in the second book already touched upon,[3] scarcely any modification of the Aristotelian doctrine. The work upon Melissus, Zeno and Gorgias, of the date of whose composition we know absolutely nothing, proves its spuriousness not so much by any positive deviations from the Aristotelian teaching as by the defects of its historical statements and critical expressions, as well as by the general obscurity of its aim.[4] Of works upon Physics the book upon the World will hereafter engage our attention as an example of the eclectic method of combining Peripatetic and Stoic doctrines.[5] The treatise upon Indivisible Lines which, if it is not the work of Theophrastus himself,[6] appears to date from his time, ably combats a view which Aristotle had rejected. To the school of Theophrastus and Strato perhaps belong the treatises upon Colours, Sounds, the Vital Spirit, and the

[1] The *Postprædicamenta* treat of (1) c. 10–1, the four kinds of opposition which have been described already, *supra*, vol. i. p. 223 sqq.; (2) c. 12, the different significations of the πρότερον, with a slight, but merely, formal dissent from *Metaph*. v. 11; (3) c. 13, the significations of the ἅμα, this section being only based in part upon the earlier texts and in part original (cf. WAITZ, *ad loc.*), though not contrary to the views of Aristotle; (4) c. 14, concerning the six kinds of motion, in agreement with the views stated *supra*, vol. i. p. 423, n. 1: (5) c. 15, on the ἔχειν, the meanings of which are set out rather differently from the Aristotelian account in *Metaph.* v. 23.

[2] Cf. with *supra*, vol. i. p. 66, n. 1.

[3] *Supra*, vol. ii. p. 429, n. 1.

[4] Cf. herewith ZELL. *Ph. d. Gr.* i. 464 sqq.

[5] ZELL. *Ph. d. Gr.* iii. a, 558 sqq. 2nd ed.

[6] Cf. *supra*, vol. i. p. 86, n. 1, and ZELL. *Ph. d. Gr.* i. 868, 4.

Motions of Animals—works which are not without independence, and exhibit evidence of respectable work in the field of science. The first of these, differing widely from Aristotle, traces the origin of the colours to the elements, of which fire is said to be yellow while the rest are naturally white; black is caused by the transmutation of one element into another, the burning up of air and water and the drying up of water.[1] All colours are said to be mixtures of these three elements.[2] Light is described as the proper colour of fire;[3] that it is conceived of as corporeal[4] is obvious, not only from its being classed, as we have just seen, with the colours, but also from the way in which the lustre and the dulness of thick transparent bodies are alike explained.[5] Upon the further contents of this treatise, as it goes on to discuss in detail the preparation of colours and the natural hues of plants and animals, we cannot here stop to enlarge. With regard, similarly, to the short

[1] *De Color.* c. 1; PRANTL, *Arist. v. d. Farben,* 108, finds in this treatise a confusion of two views: (*a*) that darkness is either the absence or partial absence of light (the latter in the case of shadows or of rays penetrating through the density of some transparent body); and (*b*) that blackness is to be explained in the manner stated in the text. The inconsistency, however, is only apparent: for the *σκότος*, which produces the appearance of the blackness (791, a, 12), is to be distinguished from the *μέλαν χρῶμα*, which is the quality of bodies tending to check light and produce *σκότος* (791, b, 17).

[2] C. 1, 791, a, 11, c. 2, 792, a, 10, c. 3, 793, b, 33. For more detailed theories on the origin of the different colours, see c. 2, 3.

[3] C. 1, 791, b, 6 sqq.; cf. with 791, a, 3.

[4] Strato held the same views on this, but not Aristotle or Theophrastus; *supra*, vol. i. p. 518, n. 3, vol. ii. p. 379, n. 1.

[5] Lustre (*στίλβον*) is (c. 3, 793, a, 12) a *συνέχεια φωτὸς καὶ πυκνότης*: transparent matter looks dark, when it is too thick to allow the rays of light to pierce it, and bright when it is thin, like air, which when not present in too dense a form is overcome by the rays: *χωριζόμενος ὑπ' αὐτῶν πυκνοτέρων οὐσῶν καὶ διαφαινομένων δι' αὐτοῦ* (c. 3, 794, a, 2 sqq.).

work upon Sounds, which in tone and method is related to that on Colours, and is to be attributed perhaps to the same author, it will be sufficient to refer to our previous quotation from it.[1] We must assume a different author for the work upon the Vital Spirit,[2] which discusses in a somewhat sceptical tone the origin, sustenance, diffusion, and operation of the *anima vitæ* accepted by Aristotle as the primary substratum of the soul.[3] This book, on account of its fragmentary character and the numerous corruptions in the text, is sometimes almost incomprehensible to us. Its general presuppositions of design in nature,[4] and of a soul and vital spirit united with it[5] in man, are Aristotelian. Peculiar to itself, on the other hand, is the assumption that the vital spirit, as Erasistratus had held,[6] spreads from the heart by means of the arteries through the whole body, and that it is this (and not, as Aristotle held, the flesh) which is the primary organ of sensation.[7] Respiration, the pulse, the consumption and distribution of the food,[8] are effects of the operation of the vital spirit, which nourishes itself from the blood, the breath serving only, as Aristotle had taught, to cool it.[9] The relation of the

[1] *Supra*, vol. ii. p. 465, n. 8.

[2] As to which cf. also *supra*, vol. i. p. 89, n. 3, *ad fin.*

[3] *Supra*, vol. ii. p. 6, n. 2.

[4] Cf. c. 7, 484, b, 19, 27 sqq. c. 9, 485, b, 2 sqq.

[5] C. 9, 485, b, 11; cf. with c. 1, 480, a, 17, c. 4, 482, b, 22, c. 5, 483, a, 27 sqq. The subject of the treatise did not give any occasion for the statement of any view as to the Νοῦς.

[6] As to this physician, who was probably a pupil of Theophrastus (*supra*, vol. ii. p. 451, n. 2), and as to his theory of the dissemination of the *pneuma* through the arteries, see SPRENGEL, *Gesch. d. Arzneik.* 4 ed. i. 525 sqq.; on the relations of the π. πνεύματος to his teaching see ROSE, *De Arist. Libr. Ord.* 167–8.

[7] C. 5, 483, a, 23 sqq. b, 10–26, c. 2, 481, b, 12, 18.

[8] C. 4–5.

[9] Cf. *supra*, vol. ii. p. 6, n. 2, p. 43.

operative *pneuma*,[1] which was said to reside in the sinews and nerves,[2] to this vital principal is not made altogether clear.[3]

Of a later date than this treatise,[4] and much more clearly written, is one upon the Motion of Animals, which professes to be the work of Aristotle,[5] inadmissible as this claim is.[6] The contents of this work are almost entirely drawn from Aristotle, but are in parts so combined as wholly to contradict the spirit of his teaching. It starts from the principle that all motion must ultimately be referred to a self-moving and unmoved entity,[7] but proceeds by a singular application of it to draw the conclusion that every mechanical

[1] C. 1–2, c. 5 *ad fin.* where at p. 484, a, 8 we must read: *σύμφυτον πῶς ἡ διαμονή*, &c.

[2] The sinews and nerves were not distinguished by Herophilus, the first discoverer of nerves, or by his contemporary, Erasistratus, or indeed for a long time afterwards, but they were designated as a whole by the common term *νεῦρα*, which had originally signified the sinews only; SPRENGEL, *ibid.* 511–12, 524–25.

[3] C. 8 *init.* (where at p. 485, a, 4 we should probably read: *πάντων δ' ἐστὶ λόγον βέλτιον ὡς καὶ νῦν ζητεῖν*): *οὐκ ἂν δόξειε κινήσεως ἕνεκα τὰ ὀστᾶ, ἀλλὰ μᾶλλον τὰ νεῦρα ἢ τὸ ἀνάλογον, ἐν ᾧ πρώτῳ τὸ πνεῦμα τὸ κινητικόν.*

[4] As we see from the fact that the *π. πνεύματος* is quoted in the *π. ζῴων κινήσεως* c. 10, 703, a, 10; cf. *supra*, vol. i. p. 92. The possibility that both works have the same author is not excluded: but the style and manner of expression differ too much.

[5] The first words of the *π. ζῴων κινήσεως* present it as the completion of an earlier inquiry, which is evidently meant to indicate the *π. ζῴων πορείας*. Again in c. 1, 698, a, 7 we have a reference to *Phys.* viii. in c. 6, at p. 700, b, 4, lines 21 and 9 (cf. *supra*, vol. i. p. 80) to the *π. ψυχῆς* and the *π. τῆς πρώτης φιλοσοφίας*; in c. 11 *ad fin.* to the *π. ζῴων μορίων*, the *π. ψυχῆς*, the *π. αἰσθήσεως καὶ ὕπνου καὶ μνήμης*, and to the *π. ζῴων γενέσεως* as an immediately preceding treatise. These references are made just in the way in which Aristotle himself was accustomed to quote his works. Nevertheless the *π. ζῴων κινήσεως* is so free, both in style and matter, from any of the marks which would betray a very late date, that we should not be justified in referring it to a time subsequent to the work of Andronicus.

[6] *Supra*, vol. i. p. 93, n. 1.

[7] C. 1, 698, a, 7 sqq. (where

motion presupposes two unmoved entities: in the thing itself a motionless point from which the motion proceeds, and outside of it a motionless body upon which the thing rests;[1] from which it again concludes that the unmoved principle which propels the world cannot be within the latter, but must be outside of it.[2] It further shows in a discussion with which we are already familiar, how the presentation of the desirable object to the mind creates the desire, and this in turn the physical movements,[3] which all proceed from the centre of the body as the seat of sensation—or, to be strict, from the soul, which there has its abode.[4] The soul thus operates upon the body by means of the expansion and contraction, the rise and fall of the vital spirit (*πνεῦμα σύμφυτον*). In order that it should so operate, however, it is not necessary that it should leave its seat in the heart and act directly upon all parts of the body, since, in virtue of the principle of order that governs the whole, its decrees find automatic fulfilment.[5]

we should read *τούτου δὲ τὸ ἀκίνητον*), and c. 6, 700, b, 7.

[1] C. 1, 698, a, 11, c. 2 *ad fin.*; and c. 4, 700, a, 6 sqq. We have also at 698, a, 11 the remarkable statement: *δεῖ δὲ τοῦτο μὴ μόνον τῷ λόγῳ καθόλου λαβεῖν, ἀλλὰ καὶ ἐπὶ τῶν καθέκαστα καὶ τῶν αἰσθητῶν, δι' ἅπερ καὶ τοὺς καθόλου ζητοῦμεν λόγους*—which is an exaggeration of the view which is indicated as that of Aristotle, *supra*, vol. i. p. 167.

[2] C. 3–4, where the myth of Atlas referred to in *De Cælo*, ii. 1, 284, a, 18, is proved to be mechanically impossible. We might conclude from 699, a, 31 that the author did not share Aristotle's belief as to the stillness of the earth, but this is hardly his meaning. He is only carried away in the heat of controversy into using an argument which would make, in fact, against Aristotle himself.

[3] C. 6–8; *supra*, vol. ii. p. 110 sq.

[4] C. 9.

[5] C. 10. This recalls both the work quoted, the *π. πνεύματος*, and also the *π. κόσμου*, which, in the discussion it contains as to the action of God on the world (c. 6, 398, b, 12 sqq, 400, b, 11 sqq.), appears to have in view the passage referred to in the text, as also c. 7, 701, b, 1.

The pamphlet ends with some remarks upon involuntary movements.[1]

Among the superior pseudo-Aristotelian writings we must reckon also the *Mechanical Problems*,[2] which, however, contain too little of a philosophical character to detain us here.—Even the work on Physiognomy, however mistaken the attempt as a whole, furnishes us with an example of logical methods and careful, sometimes even keen, observation. Its leading thought is the complete interdependence of body and soul;[3] from which it concludes that there must be certain physical indications of moral and intellectual characteristics, the extent and subtilty of which may be measured both by the analogy of certain of the lower animals and by the impression produced by the figure, features and gait. On this latter subject many of its observations are not without value.—The tenth book of the *Natural History*[4] deviates from one of the fundamental principles of the Aristotelian physiology[5] by the assumption of a female seed, but in other respects gives evidence of careful observation, remarkable for that time. At the earliest it belongs to the school of Strato.[6]—The pseudo-

[1] C. 11.

[2] *Supra*, vol. i. p. 86, n. 1.

[3] C. 1 *init.*: ὅτι αἱ διάνοιαι ἕπονται τοῖς σώμασι, καὶ οὐκ εἰσὶν αὐταὶ καθ' ἑαυτὰς ἀπαθεῖς οὖσαι τῶν τοῦ σώματος κινήσεων . . . καὶ τοὐναντίον δὴ τοῖς τῆς ψυχῆς παθήμασι τὸ σῶμα συμπάσχον φανερὸν γίνεται &c.; c. 4 *init.*: δοκεῖ δέ μοι ἡ ψυχὴ καὶ τὸ σῶμα συμπαθεῖν ἀλλήλοις &c. This συμπάθεια recalls the terminology of the Stoics.

[4] Probably identical with the ὑπὲρ τοῦ μὴ γεννᾶν, which has been mentioned *supra*, vol. i. p. 87, n. 1.

[5] C. 5, 636, b, 15, 26, 37, c. 6 *fin.* c. 2, 634, b, 29, 36, c. 3, 636, a, 11, c. 4 *fin.* &c., wherewith cf. vol. ii. p. 50 sq.

[6] The female seed has already been discussed in connection with Strato, *supra*, vol. ii. p. 466, n. 1. This book differs still further from Aristotle (as ROSE, *Arist. Libr. Ord.* 172, points out) in that it inculcates that the

Aristotelian *Tales of the Marvellous* cannot be adduced as examples of independent research, but only as a proof of the uncritical eagerness with which the later learning was wont to collect even the most improbable statements, if only they were surprising enough; and the same is in the main true of the form in which the *Problems* have come down to us. These works are useless to us in a history like the present, if for no other reason, because we are entirely ignorant through how many hands they have come, and when they received their present form.[1]

Among the ethical works in the Aristotelian collection there are three besides the *Eudemian Ethics* which are of later Peripatetic origin: the essay upon *Virtues and Vices*, the so-called *Magna Moralia*, and the *Economics*. The first of these will come before us hereafter among the evidences of the Eclecticism of the younger Peripatetic school.—The *Magna Moralia* is an abbreviated reproduction of the *Nicomachean* and the *Eudemian Ethics*, which (apart from the books which are common to both of these) for the most part follows the latter,[2] although in individual sections preferring the former. The essential points of the earlier works are as a rule intelligently grasped and placed in due prominence, sometimes even receiving

seed is absorbed through the πνεῦμα, and not, as Aristotle believed, by the warmth of the uterus (c. 2, 634, b, 34, c. 3, 636, a, 4, c. 5, 637, a, 15 sqq.). That the book is post-Aristotelian is again proved by the passage on the μύλη, c. 7, 638, a, 10–18, which is copied, word for word, from the *Gen. An.* iv. 7, 775, a, 27 sqq.

[1] See *supra*, vol. i. p. 96 sqq.; and see also p. 85, n., as to the Aristotelian fragment on the Signs of the Weather; and as to the books on Plants, which do not here concern us, see p. 93 n. 2.

[2] Cf. SPENGEL, *Abhandl. d philos.-philol. Kl. d. Bayr. Akad* iii. 515–6; BRANDIS, ii. b, 1566.

further development and elucidation. The manner of presentation is in parts clumsy and not free from repetitions, nor is the proof always convincing,[1] while the *ἀπορίαι*, which the writer frequently delights to propose, receive an unsatisfactory solution, or none at all.[2] In the original parts of the work we find much that is more or less at variance with the spirit of the Aristotelian ethics.[3] The author avoids the religious view of ethics

[1] *E.g.* B. i. 1, 1183, b, 8 sqq.

[2] So ii. 3, 1199, a, 19—b, 36, ii. 15, 1212, b, 37 sqq. i. 35, 1127, b, 27 sqq. The difficulties so seriously discussed at ii. 6, 1201, a, 16 sqq. are curiously and characteristically petty.

[3] In this respect the following points may be noticed:—i. 2–3 gives us various divisions of the kinds of Good, of which only that into spiritual, bodily, and external goods (in c. 3) is Aristotelian, and the subdivision of the spiritual goods into φρόνησις, ἀρετὴ, and ἡδονὴ is taken from *Eud.* ii. 1, 1218, b, 34, where, however, these three are not given as a division, but are only intended as examples of spiritual goods. Peculiar to this author is the division of goods into the τίμια (God, the Soul, the Nous, &c.), the ἐπαινετὰ (the Virtues), the δυνάμεις (a curious expression for the δυνάμει ἀγαθὰ, *i.e.* the things, such as riches, beauty, &c., which may be used for good or evil), and fourthly, the σωστικὸν καὶ ποιητικὸν τοῦ ἀγαθοῦ; peculiar to him also are the divisions into things which are good unconditionally or good conditionally (*i.e.* virtues and external goods), into τέλη and οὐ τέλη (as health and the means to health), and into τέλεια and ἀτελῆ. The methods already introduced by the Stoics seem to have influenced the writer of the *M. Mor.* in this matter, for we know something of their fondness for multiplying distinctions between different senses of the ἀγαθὸν, *de quo v.* STOB. ii. 92–102, 124–5, 130, 136–7; DIOG. vii. 94–98; CIC. *Fin.* iii. 16, 55; SEXT. *Pyrrh.* iii. 181; SENECA, *Epist.* 66, 5, 36–7. As these Stoical classifications had their origin chiefly in the work of Chrysippus, we might found upon this circumstance an inference as to the date of the *M. Mor.* itself.—Again, though it is not true that the *M. Mor.* leaves out the dianoëtic virtues (for only the name is wanting, and at i. 5, 1185, b, 5, i. 35, the subject is really dealt with), yet, on the other hand, it is against the Aristotelian principles to say, as the author does, that only the virtues of the ἄλογον (*i.e.* the ethical virtues, which, therefore, are alone named ἀρεταὶ) are ἐπαινεταὶ, but that those of the λόγον ἔχον are not (i. 5, 1185, b, 5 sqq. c. 35, 1197, a, 16). The author, in this respect dissenting from Aristotle, under the head of the dianoëtic virtues combines τέχνη with ἐπιστήμη,

which he found in Eudemus.[1] Of the later combination of the Peripatetic teaching with Stoic and Academic elements his work contains hardly a trace;[2]

which term in the *M. Mor.* is constantly used for τέχνη (i. 35, 1197, a, 18, cf. with the *Nic. Eth.* vi. 5, 1140, b, 21; and 1198, a, 32, ii. 7, 1205, a, 31, 1206, a, 25, cf. *Nic. Eth.* vii. 12–13, 1152, b, 18, 1153, a, 23; ii. 12, 1211, b, 25, cf. *Nic. Eth.* x. 7, 1167 b, 33; only in *M. Mor.* i. 35, 1197, a, 12 sqq. is τέχνη used in the same way as in *Nic. Eth.* vi. 4, 1140, a, 11; see SPENGEL, *ibid.* p. 447); while, on the other hand, the *M. Mor.* oddly adds to the four remaining dianoëtic virtues ὑπόληψις as a fifth (i. 35, 1196, b, 37). When the author defines justice in a wide sense as ἀρετὴ τελεία, and adds that in this sense a man can be just for himself alone (i. 94, 1193, b, 2–15), he overlooks the closer definition given by Aristotle, that it is the ἀρετὴ τελεία πρὸς ἕτερον (*supra*, vol. ii. p. 170, n. 2). As to the question whether a man can do himself an injustice, which Aristotle had dealt with in the *Nic. Eth.* v. 15 *ad fin.* metaphorically as referring to the injustice of one part of the soul towards another, the author of the *M. Mor.* takes it literally (i. 34, 1196, a, 25, ii. 11, 1211, a, 27). So the question if a man can be his own friend was similarly treated by EUDEMUS, vii. 6, 1240, a, 13 sqq. b, 28 sqq. and *M. Mor.* ii. 11, 1211, a, 30 sqq. The *M. Mor.* is very unaristotelian in the circumstance that (at ii. 3, 1199, b, 1) it includes Tyranny as one of the things which may be good in themselves, even if they are not always good for individual people; and when the author (in ii. 7, 1204, b, 25 sqq.) describes pleasure as a movement of the sensitive part of the soul, he follows Theophrastus rather than Aristotle; cf. *supra*, ii. pp. 147, 391, n. 2.

[1] In the discussion on εὐτυχία, (*M. Mor.* ii. 8; *Eud.* vii. 14) the author suggests that it consists in an ἐπιμέλεια θεῶν, in that he supposes God to apportion good and evil according to merit; and, with Eudemus (*supra*, vol. ii. p. 424 sq.), he traces it back partly to a μετάπτωσις τῶν πραγμάτων, but partly also and chiefly to the happy disposition of the person's nature (the φύσις ἄλογος), the operation of which he compares with that of an enthusiasm, admitting, however, as did his predecessors, that it is directed by a Divine Being. The author of the *M. Mor.* further agrees with Eudemus (*supra*, vol. ii. p. 425, n. 1) as to the union of all the virtues to form καλοκἀγαθία (ii. 9), and concludes with him that the real function of ethical virtues is that they guard the active reason from derangement by the passions; but he omits the consideration of the relation of reason to the Godhead and the doctrine that the knowledge of God is the final aim of life.

[2] The only passage in which we can find any positive reference to the doctrine of the Stoics is that just cited, *i.e.* i. 2; there is, perhaps, a negative reference in ii. 7, 1206, b, 17: ἁπλῶς δ'

and partly on this account, and partly on account of the poverty of its language as contrasted with the richness of such writers as Critolaus, it must be referred to the third or at latest to the second century; but in scientific independence it is decidedly inferior even to the *Eudemian Ethics*.—Of earlier date than the *Magna Moralia* is without doubt the first book of the *Œconomics*. The contents of this small but well-written treatise consist partly of a recapitulation and summary, partly of an expansion of the view Aristotle had taken in the *Politics* of the Household, the relation of Man and Wife, and Slavery;[1] the last of these he does not attempt to justify.[2] The most original part of it refers to the separation of Economics as a special science from Politics—a modification of Aristotle's views which we have already met with in Eudemus.[3] The book in general reminds us of Eudemus; its relation to the economical sections of the *Politics* very much resembles that of the *Eudemian* to the *Nicomachean Ethics*, and the whole style of treatment, and even the language—which is clear and elegant, but lacks the nerve of Aristotle's[4]—would afford further support to the conjecture that Eudemus was its author. Philodemus, however, attributes it to Theophrastus;[5] and although

οὐχ, ὡς οἴονται οἱ ἄλλοι, τῆς ἀρετῆς ἀρχὴ καὶ ἡγεμών ἐστιν ὁ λόγος, ἀλλὰ μᾶλλον τὰ πάθη.

[1] *Supra*, vol. ii. p. 213 sqq.

[2] This circumstance amongst others goes to prove that this work is not an Aristotelian sketch antecedent to the *Politics*, but is based on the cognate section of the *Politics* itself and is an elaboration of it which we certainly cannot attribute to Aristotle.

[3] *Supra*, vol. i. p. 186, n. 4.

[4] It is difficult to find, as in the *Ethics of Eudemus*, any doctrine that can be called un-Aristotelian; but the expression τὴν τῶν ἰατρῶν δύναμιν, c. 5, 1244, b, 9, is surprising.

[5] *De Vit.* ix. (*Vol. Herc.* iii.) *Col.* 7, 38, 47, 27, 15, where chaps.

all we can conclude from this is that several MSS. bore his name,[1] yet there is no decisive consideration that can be urged against the correctness of this view.[2] The second book of the *Œconomics*, which has no connection with the first, is as unmistakably later in origin as it is inferior in value. Its contents consist chiefly of a collection of anecdotes in illustration of a point in Aristotle's doctrine,[3] introduced by a dry and somewhat singular enumeration of the different kinds of Economy.[4] This book, while without doubt proceeding from the Peripatetic school, is only one of the many proofs of the paltry pedantry which after a few generations became its predominating feature.

The *Rhetoric* dedicated to Alexander, which, as formerly remarked,[5] cannot be previous to Aristotle, is the work of a rhetorician whose date cannot be further determined. It need not here delay us, as it exhibits no philosophical originality.

Even with these pseudo-Aristotelian books, our knowledge of the written works which proceeded from the Peripatetic school of the third and second centuries, and of their contents, must be admitted to be in the highest degree defective as compared with their number

1–5 of the *Economics* are submitted to a detailed and searching criticism. Cf. as to this and as to certain variations of the Philodemian from the common text which it indicates, the notes of the editor and his preface (vii.–viii.).

[1] *Supra*, vol. ii. p. 204, n. 2, vol. i. p. 86, n. 1 (π. ἀτόμων γραμμῶν) 104, and Zell. *Ph. d. Gr.* i. 476, 1, where it is shown that this was the case with many of these works, genuine or spurious, attributed to Aristotle.

[2] The absence of the *Economics* from the list of works by Theophrastus given by Diogenes proves little.

[3] *Supra*, vol. ii. p. 222, n. 2.

[4] The βασιλική, σατραπική, πολιτική, and ἰδιωτική—followed by a catalogue of the various sources of income belonging to each of these.

[5] *Supra*, vol. i. p. 74, n. 3.

and copiousness. Nevertheless such imperfect knowledge as we have places us in a position to form a true estimate of the development of this school as a whole. We see it, under Theophrastus and Strato, taking an honourable place till towards the middle of the third century; we see it especially making important contributions in the field of natural science, and under the influence of this scientific interest modifying important Aristotelian doctrines in a direction which seemed to promise greater unity to the system, but which if consistently followed out must have involved the abandonment of many of its essential features. But the spirit of the time was unfavourable to these efforts, and the Peripatetic school could not long resist its influence. Soon after the time of Strato all independence of thought in science, and simultaneously also in logic and metaphysics, ceased, and the school began to confine itself to ethics and rhetoric, and that historical and philosophical erudition which with all its extent and variety compensates us neither with a healthy criticism of tradition nor a broad treatment of history for its poverty in philosophic thought. This was the signal for its relapse into a position of subordinate importance. It continued nevertheless to do good service in propagating the knowledge of earlier researches, and in forming by the moderation of its ethical doctrine, which differed from Aristotle's only in a few isolated particulars, a wholesome counterpoise to the one-sidedness of other schools. But the lead in the scientific movement had passed into other hands, and we have to seek in the younger schools the true exponents of the philosophy of the age.

# APPENDIX

## *ON THE FORM OF THE 'POLITICS'*

(Being vol. ii. p. 204, n. 1.)

THE form in which Aristotle's *Politics* has come down to us (as to which see also i. 100, n. 1) presents many peculiar features. After a short introduction, bk. i. discusses the Household as an element in the State—chiefly on the economic side. On the other hand, the Family and Education are reserved for a later place, on the ground that they have to adapt themselves to the general form of political life (c. 13, 1260, b, 8). Passing in bk. ii. to the doctrine of the State itself, Aristotle proposes, in the first place, to investigate the Best Form of State (i. 13 *fin.* ii. 1 *init.*), proceeding by way of introduction to criticise the most famous States, whether actually historical or merely imagined by philosophers. After examining the idea of the state and of the citizen (iii. 1–5), he goes on in bk. iii. (6–13) to distinguish the different Forms of Constitution and to discuss the various points of view from which their value may be estimated. In iii. 14 he turns to Monarchy as the first of the true forms, devoting four chapters to its discussion. Chapter 18 proposes to take up the discussion of the Best State, but breaks off with an incomplete sentence, which is not resumed till bk. vii. 1 *init.* Meanwhile the subject also has to stand over. Bk. iv. treats of the Constitutions which remain after Monarchy and Aristocracy have been disposed of, viz. Oligarchy, Democracy, Polity and Tyranny. It discusses which is the best suited for the majority of states and under what conditions each is natural. Finally (cc. 14–16) it investi-

gates the various possible arrangements for the bodies entrusted with legislative, executive and judicial powers. Bk. v. is devoted to the question of change in the different forms of government, their decay and the means for their preservation. Bk. vi. introduces us (2–7) to the subordinate species of democracy and oligarchy, and (c. 8) to the discussion of the different offices of state. Bk. vii. begins (1–3) the treatment of the best state promised in iii. 18, with a discussion of happiness in the individual and in the community, and then proceeds to sketch the outlines of the best state itself (c. 4 bk. viii. *fin.*), devoting especial care to the subject of education and kindred questions (vii. 15, 1134, b, 5–viii. 7). The work ends informally with the discussion of Music.

Even earlier scholars recognised that neither the scope nor the arrangement of the work as it stands corresponds with Aristotle's original plan, and recent critics are still more pronounced on this head. After NICOL. ORESME (1489) and SEGNI (1559) had remarked that the subject of bks. vii. and viii. connects with bk. iii., SCAINO DA SALO (1577) was the first to propose actually to place them between bks. iii. and iv. Sixty years later (1637) CONRING not only independently repeated this suggestion but went on to attack the integrity of our text, indicating in his edition of 1656 a number of *lacunæ* of greater or less extent which he suspected to exist. In more recent times the subject attracted the attention of BARTHÉLEMY ST-HILAIRE (*Politique d'Aristote*, i. pp. cxli–clxxii), who, while he denied that the work as we have it is either incomplete or mutilated, held, on the other hand, not only that bks. vii. and viii. should come after iii., but that bks. v. and vi. should likewise be transposed (the latter coming between iv. and v.). He himself observes this order in his translation, and he has been followed by BEKKER in his smaller edition and by CONGREVE. Both of these suggestions are accepted by SPENGEL ('Ueb. d. Politik d. Arist.' *Abh. d. Münchn. Akad. philos.-philol. Kl.* v. 1–49), NICKES (*De Arist. Polit. Libr.* Bonn, 1851, p. 67 sqq. 112 sqq.), BRANDIS (*Gr.-röm. Phil.* ii. p. 1666 sqq. 1679 sq.), and others. WOLTMANN ('Ueb. d. Ordnung d. Bücher in d. Arist. Politik.' *Rhein. Mus.* 1842, 321 sqq.), on the other hand, while accepting the transposition of v. and vi., rejects the removal of vii. and

viii. from their present place. HILDENBRAND (*Gesch. u. Syst. d. Rechts- und Staatsphil.* i. 345–385; cf. FECHNER, *Gerechtigkeitsbegr. d. Arist.* p. 65, p. 87, 6), on the contrary, defends the traditional order of v. and vi., but inserts vii. and viii. between iii. and iv. The traditional arrangement of both these sections has been defended by GÖTTLING (Preface to his edition published 1824, p. xx sqq.), FORCHHAMMER (*Verhandl. d. Philologenvers. in Kapsel*, p. 81 sq., *Philologus*, xv. 1, 50 sq.; on the former with its curious suggestion that the *Politics* follows the order of the four causes, see SPENGEL, *loc. cit.* 48 sq., HILDENBRAND, *op. cit.* 390 sq.), ROSE (*De Arist. Libr. Ord.* 125 sq.), BENDIXEN (*Zur Politik d. Arist. Philol.* xiii. 264–301; see HILDENBRAND, p. 496), and others. No modern scholar accepts CONRING'S judgment on the integrity of the work without reservation; several—*e.g.* GÖTTLING (*loc. cit.*), and especially NICKES (p. 90, 92 sq. 109, 123, 130 sq.)—even controvert it. SPENGEL, however (p. 8 sq. 11 sq. 41 sq.), BRANDIS (p. 1669 sq. 1673 sq.) and even NICKES (98 sq.) admit several not inconsiderable *lacunæ* especially at the end of bk. viii., while VAN SCHWINDEREN (*De Arist. Polit. Libr.* p. 12; see HILDENBRAND, p. 449) held that two books, SCHNEIDER (*Arist. Polit.* i. p. viii, ii. p. 232) that the greater part of the discussion on the best state, is lost. Lastly, HILDENBRAND (p. 387 sq. 449 sq.) surmises that at least three books are wanting at the end of bk. viii., and at the end of the whole the last section of bk. vi., besides, perhaps, four books on the philosophy of law.

If, finally, we ask how we are to *explain* the present state of the text, the common opinion is that the work was completed by Aristotle himself, but that it was subsequently mutilated and fell into disorder. BRANDIS, however (p. 1669 sq.), is inclined to consider bk. viii. unfinished rather than mutilated, and this view is more fully developed by HILDENBRAND (p. 355 sq. 379 sq.), who holds that Aristotle intended to insert the essay on the ideal state which is begun in bks. vii. and viii. between iii. and iv., but postponed its completion till he should have written bks. iv. and v. and was overtaken by death before he had finished either it or bk. vi., which was to follow v.

(Some further references to the literature of the subject will be found in BARTHÉLEMY ST-HILAIRE, p. 146 sq.; NICKES, p. 67;

BENDIXEN, p. 265 sq.; HILDENBRAND, p. 345 sq., from whom the above are partly taken.)

Zeller's own view, the grounds of which can here be only shortly given, is as follows:

(1) As regards the order of the text, the majority of recent scholars are undoubtedly right in holding that Aristotle intended bks. vii. and viii. to follow immediately after iii. The contents of bk. ii. as well as its opening words taken with the conclusion of bk. i. are clearly preparatory to a discussion of the best state. This discussion is expressly taken up at the end of bk. iii., and the interrupted sentence with which it closes is resumed at the beginning of vii. in a manner that can hardly be explained except upon the hypothesis that the passage was continuous in the original. Finally, the section upon the best constitution is quite certainly presupposed by such passages as iv. 2, 1289, a, 30, b, 14, c. 3, 1290, a, 1 (cp. vii. 8, 9), c. 7, 1293, b, 1, also c. 4, 1290, b, 38 (cp. iv. 3, vii. 3), and even c. 1 (on which see SPENGEL, p. 20 sq.). If it be urged that the words *καὶ περὶ τὰς ἄλλας πολιτείας ἡμῖν τεθεώρηται πρότερον* appear to refer to the contents of bks. iv.–vi., it may be replied that these words may just as well be taken to refer to the ideal constitutions criticised in bk. ii. (*τὰς ἄλλας πολιτείας*, ii. 1, 1260, b, 29) as HILDENBRAND takes them (p. 363 sq.). The words in question, however, fit so ill the passage in which they occur that it is best to consider them, with SPENGEL (p. 26) and most other critics, as a later gloss.

(2) On the other hand, there seems no necessity to transpose bks. v. and vi., as has already been shown by HILDENBRAND. The only valid ground for this change is the close connection of the contents of iv. and vi. taken together with the preliminary review in iv. 2, 1289, b, 12 sq.—The other arguments, *e.g.* that the words *ἐν τῇ μεθόδῳ τῇ πρὸ ταύτης* in vi. 2, 1317, b, 34, refer to iv. c. 15, as though it immediately preceded, and that v. 9, 1309, b, 16, *τὸ πολλάκις εἰρημένον* refers to vi. 6 as well as to iv. 12, are of little value: the '*μέθοδος πρὸ ταύτης*' may denote not only the immediately preceding *book* (the division into books can hardly be Aristotle's) but the whole preceding section, including bks. iv. and v.; while '*πολλάκις*' is more naturally taken as referring to v. 3, 6 than to vi. 6, if indeed it is necessary to see in it a reference to any other passage besides

iv. 12, where the principle that the supporters of the existing constitution should consider their opponents, although only expressly stated in this general form, is applied with so much detail that it might very well be said to have been here repeatedly (1296, b, 24, 31, 37, as well as 15) emphasised.—The argument, however, above referred to rests upon a gratuitous assumption as to the plan of the work. The contents of iv. and vi. are undoubtedly closely related, but it does not follow that they must have formed a continuous whole. It is possible that Aristotle first completed the general theory of the imperfect forms of constitution (iv. and v.), and afterwards in vi. returned to the first section of the earlier investigation, because he wished to make a more special application of the principles there laid down. So far from contradicting this view the passage iv. 2, 1289, b, 12 sq. is quite satisfactorily explained on the supposition that it is intended merely as a sketch of the plan of bks. iv. and v. Of the five points here mentioned, the first three are discussed in iv. 3–13, the fifth (the φθοραὶ and σωτηρίαι τῶν πολιτειῶν) in v., while it is all the more likely that the section iv. 14–16 is meant for the discussion of the fourth (τίνα τρόπον δεῖ καθιστάναι ταύτας τὰς πολιτείας), as Aristotle expressly says (1289, b, 22) that he intends here to touch only lightly on all these subjects (πάντων τούτων ὅταν ποιησώμεθα συντόμως τὴν ἐνδεχομένην μνείαν: hence also the νῦν iv. 15, 1300, a, 8), and as the scheme of this discussion which is laid down in iv. 14 *init.* is actually carried out in c. 16. It is quite natural, therefore, that v. 1 should open with the words περὶ μὲν οὖν τῶν ἄλλων ὧν προειλόμεθα σχεδὸν εἴρηται περὶ πάντων, nor is there any necessity to take these words as referring to bk. vi. as well. That we should even be wrong in doing so is proved by the passages in vi. which admittedly refer to v., viz. c. 1 *init.* and *fin.* c. 4, 1319, b, 4, c. 5, 1319, b, 37; since in all these passages the rejection of the words in question or the change of a τεθεώρηται πρότερον with a θεωρηθήσεται ὕστερον could be justified only as a last resource. Finally, the incompleteness of the discussions in vi. is more easily explained if we suppose it to have been composed subsequently to v.

(3) With regard to the integrity of the text, we have to acknowledge, in the first place, that many single sentences are

irremediably corrupt. In the second place, we have several isolated passages which are undoubtedly insertions by a later hand, *e.g.* ii. 12, which was suspected by GÖTTLING (p. 345 sq. on the passage in question) and BRANDIS (1590, A, 586), though defended by SPENGEL (p. 11) and NICKES (p. 55 sq.), and rejected from 1274, a, 22 onwards by SUSEMIHL (no impartial critic can accept KROHN'S conclusion in the *Brandenburger Programm*, 'Zur Kritik Arist. Schriften,' 1872, p. 29 sq. that scarcely the half of the *Politics* can be attributed to Aristotle). Lastly, we have every ground to believe that important sections of the work were either left unfinished or have been lost. The treatment of the best state is obviously incomplete: Aristotle himself refers us for the further discussion of musical education with which he breaks off to essays on rhythms (viii. 7 *init.*) and on comedy (vii. 13, 1336, b, 20); but besides these we had a right to expect a full discussion of the question of the proper treatment of poetry, and the scientific training of the citizen, which Aristotle's principles could hardly have permitted him to leave untouched (see vii. 14, 1333, b, 16 sq. c, 15, 1334, b, 8, viii. 4, 1339, a, 4, and more fully on this and other points the section on the best state); the life of the family, the education of women, the treatment of children (παιδονομία), property, the treatment of slaves, drinking booths, are merely mentioned to be expressly reserved for later treatment (see i. 13, 1260, b, 8, vii. 16, 1335, b, 2, vii. 6, 1326, b, 32 sq. vii. 10 *fin.* vii. 17, 1336, b, 24); the constitution of the ideal state is only sketched on the most general lines, vii. 15; similarly we look in vain for any account of the laws for the regulation of adult life, indispensable as they are declared (*Ethics*, x. 10, 1180, a, 1) to be for the welfare of the state, and of legislation in general in the narrower sense as distinguished from the constitution, although earlier writers are expressly reproached (*Ethics*, *loc. cit.* 1181, b, 12) with the neglect of this point, while *Pol.* iv. 1, 1289, a, 11 requires that the discussion of the different constitutions shall be followed by that of the laws (on the distinction between them see also ii. 6, 1265, a, 1), not only of the best absolutely but of those which are best adapted for each form of constitution, and express reference is made in other passages to a section upon legislation (see v. 9, 1309, b, 14: ἁπλῶς δὲ, ὅσα ἐν τοῖς νόμοις ὡς συμ-

φέροντα λέγομεν ταῖς πολιτείαις, ἅπαντα ταῦτα σώζει τὰς πολιτείας, and iii. 15, 1286, a, 2: τὸ μὲν οὖν περὶ τῆς τοιαύτης στρατηγίας ἐπισκοπεῖν νόμων ἔχει μᾶλλον εἶδος ἢ πολιτείας ὥστ' ἀφείσθω τὴν πρώτην). Cf. HILDENBRAND, 351 sq. 449 sq. If we consider how much space all these discussions would have required, we can easily understand how large a part of the essay on the best state which Aristotle had designed is wanting. But the last-quoted passages prove also that the discussion of the imperfect forms was to be supplemented by a section on legislation to which bk. vi. appears to have been designed as an introduction. As moreover the discussion of the ἀρχαὶ in iv. 15 is resumed in vi. 8, we should have expected similar discussions of the legislative assemblies and the law courts (iv. 14, 16). Finally, seeing that vi. 1, 1316, b, 39 sq. expressly notes the absence in the foregoing discussions of all reference to the forms of constitution which result from the union of heterogeneous elements (*e.g.* an oligarchical senate with aristocratic courts of law), and proposes to remedy this omission, we must reckon this section also among those which either have been lost or were never completed.

(4) Which of these alternatives we ought to accept, and how accordingly we ought to explain the form in which the work has come down to us, we have not sufficient data to decide. But the circumstance that the chief *lacunæ* are at the end of the second and third of the main divisions of the work lends countenance, as HILDENBRAND rightly remarks (p. 356), to the view that neither was completed by Aristotle himself. We must suppose, moreover, that he developed coincidently the doctrine of the best state and of the imperfect forms, although he intended on completion of the whole to combine them in strict order of succession. This view gains some support from the fact that there is no evidence that the work ever existed in a more complete form, and that even DIOG. v. 24 (*Hermippus*) gives only eight books, while the extract from ARIUS DIDYMUS given by STOBÆUS, *Ecl.* ii. 326 sq. (cf. vol. iii. a, 546 sq.) at no point goes beyond what is contained in the *Politics* as we have it. The view here taken is accepted by SCHINTZER (*Zu Arist. Politik Eos*, i. 499 sq.), and with more hesitation by UEBERWEG (*Grundr.* i. 178, 5th ed.). SUSEMIHL, on the other hand

(*Jahrbb. f. Philol.* xcix. 593 sq. ci. 343 sq 349 sq. *Arist. Polit.* li. sq.), and ONCKEN (*Staatsl. d. Ar.* i. 95 sq.) follow Barthélemy St-Hilaire even in the transposition of bks. v. and vi. Upon Oncken's hypothesis that the *Politics* and other works of Aristotle have come down to us only in the form given to them by students, Zeller has already expressed his opinion (*supra*, vol. i. p. 133), which coincides with what Susemihl had previously held upon the same point (see *Jahrbb. f. Philol.* vol. cxiv. 1876, p. 122 sq.). The passage from *Politics*, vii. 1, discussed in vol. i. p. 115, n. 4, itself contradicts this hypothesis. On similar grounds we must reject the view (BERNAYS, *Arist. Politik*, 212) that the work we have consists of a collection of notes which were designed for the philosopher's own use in his oral instructions. In this case his style would have been much terser and more condensed, nor should we have had those forms of transition to which attention has been called by ZELLER (*supra*, vol i. p. 135, n. 2) and by ONCKEN, i. 58 (for further examples see i. 3, 1253, b, 14, i. 8 *init.* i. 9, 1257, b, 14, vii. 1, 1323, b, 36, vii. 2, 1325, a, 15), or of reference, as in iii. 12, 1282, b, 20 (οἱ κατὰ φιλοσοφίαν λόγοι, ἐν οἷς διώρισται περὶ τῶν ἠθικῶν), viii. 7, 1341, b, 40 (πάλιν ἐν τοῖς περὶ ποιητικῆς ἐροῦμεν σαφέστερον), vii. 1, 1323, a, 21, iii. 6, 1278, b, 30 (see *supra*, vol. i. p. 115, n. 4). The *Politics*, in fact, together with the *Ethics* and the *Rhetoric*, belong to that class of Aristotle's works in which the reader is most plainly before his eyes, the style being much too full for notes designed for the author's exclusive use. Let the reader take the passages i. 2, 1252, a, 34–b, 27, c. 4, 1253, b, 33–39, c. 9, 1257, b, 14–17, i. 11, 1258, b, 39–1259, a, 36, vii. 1, 1323, a, 2–1324, a, 4, vii. 2, 1324, a, 25–1325, a, 15, iv. 1 *init.* and then ask himself whether anyone would write in such a way for his own private use.

# INDEX

**THE END.**

*Spottiswoode & Co. Printers, New-street Square, London.*